ESSAYS ON ACQUISITION INVESTMENTS FROM EMERGING TO DEVELOPED MARKETS

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Abstract

The literature has little to say about M&A activities in emerging markets, especially when firms from these countries acquire targets in developed economies, yet this growing tendency has manifested itself clearly in the global markets for corporate control over the last two decades. Unsurprisingly, our understanding of what underpins their decisions to venture into more advanced economies or whether they are able to create or destroy value is still limited. Using recent data on the emerging markets, we find emerging-markets acquirers tend to acquire small firms with a relatively low stock of intangible assets in developed economies. This finding is in accordance with the strategic market entry hypothesis, which states that acquirers aim to learn from more advanced markets through market entry and gradually consolidate their global competitive position in the long run. Nonetheless, no matter what their strategy really is, we find that it is unlikely to materialize in the long run, or at least in the course of three, four or five years. Expected synergies are likely to be overwhelmed by the strong nature of the value destruction of cross-border acquisitions and evident agency and hubris problems.

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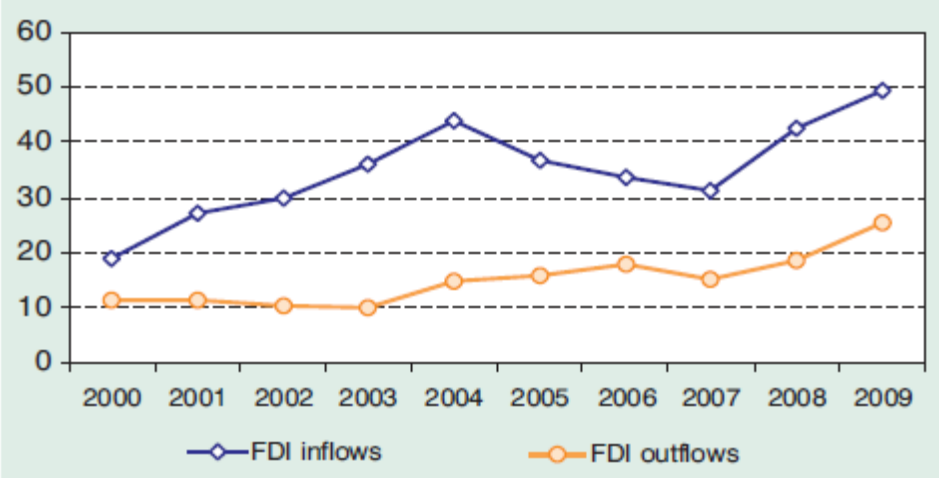
Chapter 1: Introduction

1.1. Background and motivation

Over the last two decades, FDI flows from developing countries have increased rapidly (WIR, 2006). By 2010, investment outflow from developing countries accounted for one quarter of global FDI outflows (WIR, 2010). Naturally, investors from these countries have become increasingly important players in the global FDI outflow, a field that has been dominated by firms in developed economies. The outlook for FDI outflows from these economies is also promising. WIR (2010) presents evidence suggesting that global FDI from these countries is likely to keep rising over the coming years (Figure 1).

Figure 1-1: Shares of developing economies in global FDI 2000-2009 (in percent)



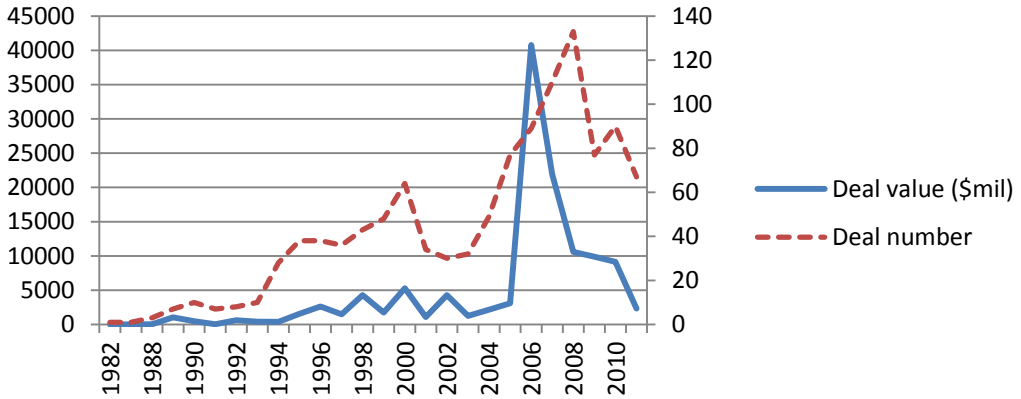
Source: World investments report 2010, p.3

In this rising trend, we observe an important feature of FDI flow from developing countries. The majority of investment outlays from developing countries is directed toward countries in the South, meaning investors in these countries tend to invest

among developing and transitional markets. Meanwhile, capital from developing economies is less likely to flow to more advanced economies (WIR, 2011).

However, the FDI from developing to developed countries has grown rapidly over the last ten years. Since 2000, acquisition FDI from developing to more advanced economies in the West has shown a particularly fast growing trend (WIR, 2006). In fact, "*FDI outflows from developing and transition economies reached 388 billion USD in 2010 and increased strongly by 21 percent over 2009. They now account for 29 per cent of global FDI outflows. In 2010, six developing and transitional economies were among the top-20 investors*". In particular, emerging economies are increasingly dynamic in cross-border investments and are becoming the new FDI powerhouse (WIR, 2011). From our own collected sample (Figure 2) we can observe a steady rise of acquisition FDI until 2003, and the flow started to grow significantly afterwards. The volume of transactions reached its peak around 2007, when more than 40 billion USD of capital flowed from emerging to developed economies in the form of cross-border acquisitions.

Figure 1-2: Deal value and number of M&A deal



Note: This figure shows the trend of acquisition FDI from emerging to developed economies in terms of total deal value and deal numbers across two decades. Source: Thomson One Banker Database

The growing acquisition FDI in this direction is characterized by several interesting motivations. First, gaining access to intangible assets may determine the acquisitions go to more advanced economies (Amsden and Hikino, 1997; WIR, 2006; Guillen and Garcia-Canas, 2009). Indeed, recent evidence indicates that Chinese acquirers are attracted by patents and trademarks of technologically advanced countries (Beule and Duanmu, 2012). Secondly, acquirers from developing nations are more vulnerable to agency problems than their counterparts in developed countries (Kim, 2000). As a result, they are more likely to be driven by managerial interests and engage in unprofitable acquisitions. Furthermore, managerial motive may overwhelm the motive to gain access to advanced technology. The reason is that managers in developing countries may resist better technology when the human capital associated with current technology would become useless (Parente, 1994; Krusell and Rios-Rull, 1996). Nonetheless, Dunning (2000, 2008) argued that firms engaging in cross-border acquisitions must entail an ownership advantage of some sort. Guillen and Garcia-Canas (2009) show a list of advantages of developing market firms such as the quick adoption of new technology, *political capabilities* and cheap labour. They argue that these acquirers may be motivated by the exploitation of such ownership advantages, even though some may question whether the value of these intangibles is sufficient (Rugman & Li, 2007; Narula & Dunning, 2010). Therefore, in this growing trend of acquisition FDI there are potential

differences in the determinants of acquisition. To our knowledge, this issue has been neglected by current literature.

It is likely that when the motivation changes, the wealth effects of acquisitions documented in the literature may change accordingly. However, the literature is really short of evidence about wealth effects on this growing trend. In a rare case, Kim (2000) finds that Korean acquirers are unable to create gains when acquiring firms in advanced economies. Another study by Kale (2000) provides empirical evidence on the wealth effects of Indian acquirers, but he fails to distinguish targets from developing and developed nations. Additionally, Boateng et al. (2008) recently claimed that their study is the first attempt which examines the wealth gains of Chinese firms in cross-border acquisitions. Similar to Kale (2004), this study does not separate targets in developing from developed countries. Moreover, their inferences, drawn upon a small sample of 27 cases, are rather limited. Given the under-researched geographical region, one may argue that it is possible to use the enormous stock of empirical evidence in previous studies in the US and UK to draw insights for acquirers in developing countries. However, we argue that the remarkable differences between developing and developed regions may limit the extent to which existing results can be generalized. In brief, our knowledge about the wealth effects of acquisition FDI from developing countries is inadequate. Further empirical evidence is therefore necessary.

Also on the issue of wealth effects, many previous studies are subject to major shortcomings in the methodology. A large number of studies used a single-index model

and short time frame in an attempt to capture the wealth effects. However, Jensen (1986) casts doubt that this model is unable to capture the "pure" effects of acquisitions. Coutt et al. (1996) further challenge the assumption of a single-index model. Other studies use the control firm approach advocated by Barber and Lyon (1997). However, this approach is compromised by a dimensionality problem[1]. Recent development in this methodological issue is the employment of propensity score matching in tandem with difference-in- differences technique. This combined approach is effective in mitigating selections on multiple observable characteristics and, to some extent, selections on unobservable characteristics (Girma et al., 2006; Blundell and Costa-Dias, 2000). To our knowledge, no previous study addressing acquisition FDI from developing countries employs such an approach. This provides us with an opportunity to produce evidence on the basis of a sound methodological framework.

In this thesis, we take the above issues on the wealth effects, methodology and determinants of acquisitions into consideration. The aim of this thesis therefore is to undertake a systematic investigation of the determinants and consequences of cross-border acquisitions from developing nations.

1.2. Research questions

This thesis aims to answer three questions. The first inquires about the motivation of acquiring firms in developing markets. Our objective is to find which characterisics of

[1] *The dimensionality problem is described as the problem associated with matching upon three or more dimensions (each dimension represents one conditioning variable). In matching upon multiple dimensions, there can be too many candidates that can be used as the matched firm while there is no mechanism to define which one is the best match.*

target firms attract bidders in developing countries. This helps us to shed more light on the explanatory power of existing theories on this growing trend of acquisition FDI. It is noted that the common and more direct method for this task is using logistic regression to find multivariate relationships between ex-ante bidders characteristics and the bidders probability of acquisition. However, such a method requires data on the characteristics of bidders before the acquisition events. As this type of data is very limited in emerging markets, it is not yet possible to examine large number of firm-level determinants. To overcome such limitations, we employ an indirect approach whereby we examine the characteristics of targeted firms in developed economies. Available firm-level data in developed markets can accomodate an investigation of more competing theories relating to the determinants of acquisition. Moreover, although we prefer to place emphasis on acquirers from emerging-markets throughout the thesis, we have to extend our sample in this question to include observation of firms acquired by bidders in other non-developed nations in order to meet the intensive data requirement.

In the second question, we aim to answer what are the long-term wealth effects of acquisitions in advanced markets on emerging-markets acquirers? The last question naturally follows, where we examine whether any variation in these wealth effects can be explained on the basis of competing hypotheses of current literature. The final question investigates the motivation of acquirers in this growing trend of acquisition FDI. With regards to the examination of avearage wealth effects, although this issue has been previously examined (Rau and Vermaelen, 1997; Cakici et al., 1996; Bayazitova et

al., 2009), major debate about the methodological issue still remains. It has always been difficult to justify the abnormal returns estimation models used to isolate the "pure" effects of M&A on the acquirers performance long after the completion of the M&A (Jensen, 1986). In addition, the evidence regarding wealth effects for emerging-market (EM) acquirers, especially in the long run, is rather scant in the literature. It is even more difficult to find studies that specifically address EM bidders and DV[2] targets. The lack of evidence is perhaps due to the fact that around 75% of FDI outflow from developing nations is directed to less developed economies (WIR, 2006), however the growing trend of acquisition FDI from developing nations (as shown in Figure 1) has not been reflected adequately in the academic literature. Given such shortcomings, the first essay aims to address the methodological issue and provide new evidence on the issue of long-run wealth effects.

While the second question addresses the long-run wealth effects of cross-border M&A on the bidders performance on a sample average, the last one aims to find out what determines the wealth effect on a firm level? More specifically, we attempt to identify significant factors which underpin the variation of wealth effects across bidders in emerging countries. Since theoretical frameworks about the potential determinants and relevant empirical findings have been well documented in the literature, the main aim of the final essay is to seek potential firm-level determinants which are specific to the context involving capital flow from emerging to developed markets. The essay also aims to examine whether there are any differences in sign and magnitude of the

[2] *Targets located in developed economies.*

determinants to existing results, especially when the wealth effects are measured within a more advanced methodological framework.

1.3. Outline of the thesis

This thesis consists of three essays. The first essay attempts to draw inferences about the motivation of acquirers by examining the characteristics of their targets (Chapter 2). The second essay examines the average wealth effects of M&A on the long-run stock performance of acquirers from emerging countries when they acquire firms in developed markets (Chapter 3). The final essay is a natural extension of the second, where we examine the firm-level determinants of long run abnormal returns in the same context (Chapter 4).

In the first essay, we attempt to examine the motivation of acquirers from non-developed countries when they acquire targets in developed countries. We extend the country group of acquiring firms from emerging to non-developed countries and employ an indirect approach to meet the data requirement. The indirect approach is used in the spirit of Zhu et al., (2011) and Thompson (1997), where the motivation of the acquirer can be withdrawn via a multivariate comparison of the targets characteristics among component groups. More specifically, we use a multinomial logistic regression method to compare theoretical variables determining the decision to acquire a target in a particular group. The empirical results allow us to learn which one among the competing theories relating to acquisition motives is suitable for the context of this investigation. We find no evidence supporting the conventional market for corporate control (MCC)

hypothesis, as previous work often does. We find that acquirers in non-developed markets generally aim at small firms with a relatively low stock of intangibles compared with the corresponding industry average. This evidence is consistent with the Strategic Market Entry hypothesis, which posits that the primary motive of an acquirer is to expose itself into an advanced business environment and gradually build up ownership advantages for competition in the long run.

In the second essay, we argue that the rising trend of outward FDI from emerging to developed countries in the form of mergers and acquisitions has not been reflected adequately in the literature, even though large volume of studies documented in the literature involve acquirers from advanced economies. We also argue that the most important issue for this type of study lies in the methodological framework. Against this background, we seek to provide better treatment for the estimation of the abnormal return of the acquirer by employing a combination of propensity score matching and difference-in-differences technique. As such, a combined method can effectively deal with selections on observables and unobservables, and we are confident we can draw a conclusion about the strong nature of the value destruction of acquisition events regarding the acquirers long-run performance in this particular context.

While the second essay examines the weighted average wealth effects, the final one naturally follows with an examination of the determinants of the variation of wealth effects across acquisition events. In this firm-level investigation, we include a broad set of firm-level, industry-level and macroeconomic explanatory variables that potentially

exert significant influence on the estimated abnormal returns. Before that, the abnormal returns are estimated within various matching frameworks in order to increase the robustness of the empirical findings. We analyze the multivariate relationships and find evidence suggesting that diminishing abnormal returns are attributed to significant agency problems, while larger acquirers might use the incremental economies of scale generated from acquired assets to partially compromise the negative effects of acquisition events.

Chapter 2: Motivation of non-developed market acquirers

2.1. Introduction

Acquisition FDI from emerging to developed countries has increased rapidly over the last two decades. Yet, little is known about the motivation of acquirers from emerging economies. , yet. Recent studies (e.g. Guillen and Garcia-Canas, 2009; Grimpe and Hussinger, 2009; Mathew, 2006) posit that the main motivation acquirer in this specific context is to upgrade their technological capabilities and gain new experience by exposing themselves to the sophisticated and cutting edge demand. In other words, the lack of core skills in modern production such as advanced technology and management expertise boost their incentive for such assets in developed countries (Rui and Yip, 2008; Guillen and Garcia-Canas, 2009). This proposition is interesting, as it suggests different motives to disciplining inefficient management which is widely documented in the literature (Zhu et al., 2011; Dunning, 2000; Thompson, 1997). Nonetheless, this proposition is only backed up by scant empirical evidence.

We therefore conduct an empirical investigation of the acquirers motive. This study essentially compares various characteristics of non-acquired firms to those of acquired firms in order to detect firm-level characteristics of targets in developed countries which attract acquisitions from non-developed countries. We hypothesize that if the motive of the non-developed market bidders is strategic market entry (i.e. they look for resources and growth rather than to replace underperforming management), their targets should have better performance, richer resources and greater potential growth than non-

targets and the targets of developed market bidders. We examine these hypotheses within a multinomial logistic regression framework and use a relatively large sample consisting of more than 23000 targets located across 20 developed markets and a wide range of industries. The acquired firms are divided into three groups: (1) firms acquired by acquirers in non-developed nations (ND targets), (2) ones acquired by acquirers in developed markets (DV targets), and (3) non-targets to fit the methodological framework of this study.

We find that ND targets are consistently and significantly smaller in size compared to DV targets and non-targets. This finding is consistent with the strategic market entry theory, since acquiring small targets allows for the easy and quick access to quality resources. In addition, we find evidence that acquirers in non-developed markets aim at firms with lower total factor productivity (TFP) than that of the industry median. This finding suggests that there is a threshold level of a targets technology that acquirers in less developed countries do not wish to breach, perhaps due to problems associated with a substantial technology gap. Finally, we find no evidence supporting the market for corporate control hypothesis.

The rest of this paper is organized as follows. The next section reviews relevant theories and presents our hypotheses, and then the following section describes the methodology and data for this examination, before the empirical results are then presented and discussed. The final section summarizes this essay.

2.2. Theoretical framework

We find in three alternative theoretical frameworks that explain the motivations of acquirers in cross-border acquisitions in the literature, including: (1) the ownership advantages paradigm (Dunning, 2000); (2) the Linkage-Leverage-Learning theory (Mathew, 2006), and (3) theories concerning the incentive to gain access to strategic assets (Athreye and Kapur, 2009; Guillen and Garcia-Canal, 2009; Rui and Yip, 2008; Gattai et al., 2010)

2.2.1. Classical theories

2.2.1.1. Ownership advantages paradigm

In an earlier study, Jensen and Ruback (1983) presented a view of the takeover market as an arena where management teams compete for the control rights of a firms resources. In this market, poorly performed incumbent management is replaced by a better team. From this perspective, the general motivation of acquisition is to find and discipline a management team with a bad track record. In other words, acquiring firms are motivated by exploiting their superior management quality on potential targets. From a slightly different perspective but consistent with Jensen and Ruback (1983), several studies argue that underperforming firms are vulnerable to takeovers (Maine, 1965; Davis and Stout, 1992). For instance, Maine (1965) argues that the stock price of a public corporation is the only objective evaluation of management quality. As the stock price dips lower, it creates a stronger incentive for more competent managers who are capable of driving the price back up (Davis and Stout, 1995). These two arguments fit

well in the view of M&A as an arena for corporate control, because one argues that acquirers tend to have the power to improve performance while the other argues that targets are usually underperforming.

In a later study, Dunning (2000, p.164) theorizes that specific competitive advantages of the firm are the key determinants in their decision for foreign expansion since such advantages can set their firms on the favourable side of market imperfection. Conventional literature has identified three main types of competitive advantages. First is the possession of monopoly power that blocks other competitors from the entry of certain market segments (Caves 1982; Porter, 1985). Second, possession of special resources and capabilities that allow the firm to achieve superior technical efficiency compared to competitors is another important competitive advantage (Safarian, 1966). Third is the quality or competencies of the firms managers. Quality managers who are able to harness external resources and align them with existing resources in a way that best advances the interest of the firm can certainly put their firms ahead of competitors (Bartlett and Ghoshal, 1993). With the possession of these types of competitive advantages, firms can either exploit their monopoly power or take advantage of their superiority in technical efficiency and management quality in their expansion into foreign countries. In other words, the motivation of foreign direct investment (FDI) activities, according to Dunning (2000), is to exploit the ownership advantages of some fundamental elements of the production process. These traditional studies form a strong theoretical framework to explain the motive of acquiring firms in takeover markets.

Indeed, a number of examinations of the market for corporate control hypothesis have been conducted in the literature (Singh, 1975; Cosh et. al. 1980; Thompson, 1997; Zhu et al., 2011). For example, Zhu et al. find that unprofitable firms in emerging markets are more likely to be targets of domestic rather than cross-border takeovers. They argue that domestic acquirers share a business, culture and legal environment with the targets which gives them more information to detect poorly managed targets and also causes lower integration costs than foreign raiders.

However, these studies only focus on the domestic acquisitions, and mostly on the developed markets. Little is known about the motivation of acquiring firms in non-developed countries. The key ownership advantages such as advanced technology, superior management quality and monopoly power are more likely to pertain to firms in developed countries than to ones in emerging markets. Emerging-market firms might have competitive advantages of their own, however we have little knowledge about whether such advantages are of significant value when they venture abroad.

2.2.1.2. Incentive for strategic assets

As an alternative to the OLI (Ownership-Location-Internalization) paradigm, reverse internalization can be used to explain the motive of cross-border acquisitions. According to the this framework, acquirers are motivated by the skills and resources of target firms since they are convinced that such assets would enhance the overall expertise and resources of combined firms, therefore creating imperfections and new investment opportunities in their home markets (Seth et al., 2000; Eun et al., 1996). Consistently,

Harris and Ravenscraft (1991) argue that acquirers *"may pursue acquisitions to capitalize on monopoly rents or internalize actions that are costly to transact through the market mechanism* (due to incomplete contract problems)*"*. In line with these studies, we argue that acquirers may well be motivated by the potential access to strategic assets, as such assets hold the key to enhanced competitive advantages.

In fact, the literature highlights several crucial benefits of gaining access to strategic assets. One of the benefits of acquiring strategic assets such as R&D is that substantial fixed R&D costs can be spread over a number of national markets, thereby generating greater economies of scale. In addition, assets such as proprietary technology, privileged access to inputs, efficient distribution system and capability to differentiate products and services can be used to exploit or even create market imperfections, thus enhancing the competitive advantages of the acquirers (Bain, 1956). Gaining control of these advantages may lead to an improvement of operational efficiency, enhancement of market shares and upgraded capability to cope with continual changes in the business environment (Grimpe and Hussinger, 2009).

Furthermore, acquired technological assets can be complementary to a bidders existing assets. The combination of external technologies and in-house research and development may have positive influences on firm performance and growth since the combined assets can help to speed up the research-to-market process and add attractive features to existing products and services (Kogut and Zander, 1992). The combination also facilitates the extension of a customer base and distribution network,

thus an increase in revenues by selling their products and services to the targets existing customers (Graebner, 2004; Raft and Lord, 2002). For instance, acquiring firms may use the sales network of the acquired target to extend the distribution network of their existing products (as was the case when Lenovo purchased the laptop manufacturing section of IBM), thereby increasing their market shares and enhancing their competitive positions in global markets (Capron et al., 1998).

Besides technological capability, quality human capital of the target firm is also crucial in streamlining the management system of the poorly managed acquirers. Morck and Yeung (1991) argue that the skills and expertise of the acquired firms management can be deployed in a larger scale for scale economies. The existing human capital of the acquirer may as well be enhanced since the incumbent managers may learn from the targets managers, or these managers may even train the acquirers managers (Capron et al., 1998).

Acquiring strategic assets may also represent the strategic move of the acquiring firms to infiltrate certain high demand or technology-intensive industries. Holding a targets intellectual properties, on one hand, can help acquirers unblock the technology barrier of a new market (Grimpe and Hussinger, 2009; O'Donoghue et al. 1998; Graff et al. 2003). On the other hand, gaining access to important patents can prevent potential rivals from market entry and can also block them from future access to protected technology. According to Cohen et al. (2000), the reason for the ownership of international property rights (IPR) often extends beyond making a profit from the

acquired patents either through commercialization or licensing. Prevention of rival firms from patenting related invention is one of the most important motives of gaining IPR ownership. In consistence with Cohen et al. (2000), Blind et al. (2006) reiterate that the core motive of gaining control over technological assets is to block competitors. The endemic law suits among giant mobile phones manufacturers over the last decade clearly manifest the importance of seizing protected technology. Accordingly, control of intellectual property rights, especially patents, could be essential for the firm to maintain, consolidate and enhance their position in the technology market.

Given the important benefits of the ownership of strategic assets, we argue that the rationale of reverse internalization theory is similar to that of the OLI paradigm since both theories hinge on the imperfections of product markets that the strategic assets create, the economies of scale of R&D fixed costs and the difficulties in transferring complex technology via market transactions. The difference between the two is the flow direction of knowledge. While strategic assets are transferred from acquirers to targets in the OLI paradigm, they are taken from the targets in the reverse internalization theory (Seth et al., 2000). Therefore, the reverse internalization theory appears to be more persuasive than the OLI paradigm in explaining acquisitions where bidders lack expertise and high quality resources.

2.2.1.3. Linkage-Leverage-Learning (LLL) theory

LLL theory is in sharp contrast to the OLI paradigm. It accommodates the incentives of the firms to possess the strategic assets. According to LLL theory (Mathew, 2006), an

alternative approach to internationalization is seeking resources from external entities that are unavailable in domestic markets. Mathew (2006) highlights two sources of competitive advantages. First, competitive advantages can be gained from reaching out to sources of knowledge in the foreign markets. Second, firms can also learn and improve efficiency from performing such tasks repeatedly. In other words, experience in learning-by-doing is the other source of advantage. Since the sources of advantage are not proprietary like intangible ownership advantages, the LLL theory may be more powerful than OLI in explaining the motivation of firms that lack initial resources in internationalization.

2.2.2. Motivation of non-developed-market firms

LLL theory and incentives for strategic assets appear more suitable in explaining the motivation of acquirers in non-developed markets in the takeovers of firms in developed countries for several reasons, including the mismatch between MCC and the profile of EM firms, the great incentives for strategic assets of EM acquirers, and the advantages of acquisition mode of entry in gaining access to quality resources.

Mismatch between MCC theory and the profile of emerging-market firms

Firstly, the market for corporate control view does not fit well with the ownership advantages of firms in non-developed countries. Ownership advantages of these firms, according to Guillen and Garcia (2009), mainly comprise adaptive capabilities in various political environments and the ability to gather a large army of labour in a short period of time. Meanwhile, their technology and management capabilities are still in the infant

stage. Their ownership advantages are therefore unlikely to make up for ownership disadvantages in the current stage of knowledge-based global market.

In addition, non-developed market firms often invest a small stake of interest in foreign markets. The reason is that the ownership structure of firms in these markets is dominated by founding family members (Bhaumik et al., 2010), and some characteristics of family-controlled firms hinder the outward FDI, especially the FDI toward developed countries (Bhaumik and Driffield, 2011). Family-controlled firms have their own design of business model that has been proven to be successful in the local market, and as a result family members are reluctant to change their business model in the new business context (Gallo and Sveen, 1991). Moreover, families in control evidently expropriate returns that should have been accrued to minority shareholders (Baek et al., 2006; Bertrand et al., 2002). Such expropriation is protected by the dominance of family members in the ownership structure. However, undertaking cross-border acquisitions would require firms to subject themselves to a higher standard of due diligence and regulatory scrutiny, thus leading to the potential inability to extract private benefits. Accordingly, family members are reluctant to go ahead with the cross-border expansion (Bhaumik et al., 2010), so the main operation of these firms is likely to remain in local markets.

Furthermore, emerging-market firms are subject to a more serious asymmetric information issue since firms among developed countries share a similar corporate culture and their markets have a long history of economic relationship. As a

consequence, emerging-market firms generally pay a higher cost for the liability of foreignness, thereby reducing the chance of success in the aftermath of the acquisitions.

Bidders in emerging markets are also unlikely to be than firms in developed markets in corporate governance. The poor regulation rooted in emerging countries prevents investors from enforcing their monitoring rights. Poor corporate governance has been long withstanding in the emerging markets, and the call to reform existing governance practice has been amplified after the Asian financial crisis in 1997-1998 (Gibson, 2003). Gibson argues that the root of corporate governance issues in emerging countries is due to a special characteristic. That is the fact that the ownership of firms in these countries is closely held by a founding family who often does a bad job in enforcing the legal rights of the shareholders. This evidence suggests that the existence of family-type large shareholders is the main cause of inefficient corporate governance as managers might favour large shareholders at the expense of minority ones. In an earlier study, La Porta et al. (2000) concluded that the strong legal protection of the investors is associated with effective corporate governance. As a consequence, La Porta argues that the lack of corporate governance is related to the agency problem described in Jensen and Meckling (1976) because the inside managers are more likely to use profits of the firm to benefit themselves at the expense of investors. As a result, weak protection for investors and family ownership in emerging countries may entail higher agency costs compared with that in developed countries.

Finally other macroeconomics and political issues may prevent emerging-market firms from operating efficiently. In a recent paper, Chernykh et al., (2010) argue that firms in emerging countries encounter more hurdles to achieve efficient operation in the global market such as government corruption and the high volatility of the business environment. In particular, the high costs of external financing in these markets could hinder these firms from pursuing growth opportunities

In short, the profile of emerging-market firms is different from that of developed-market firms. It features the lack of key competitive advantages, lack of capital commitment, lack of information and experience in advanced markets, and a wide range of hurdles that hinder efficient operation. This profile therefore does not match the market for corporate control and the ownership advantage theoretical framework.

2.2.3. Motivation to gain access to strategic assets

The motive to acquire strategic assets and learn new sources of competitive advantages seems to fit the expansion strategy of developing-market firms. Child and Rodrigues (2008) argue that the internationalization of Chinese firms is not characterized by the exploitation of competitive advantages but by addressing weaknesses incurred in operations in domestic markets. Additionally, non-developed bidders are latecomers in the international market for corporate control, who use overseas investment not only to lever their existing advantage but also to learn about new sources of competitive advantages (Harris and Ravenscraft, 1991). As a result their primary motive is more likely to be building ownership advantages for a later stage of competition rather than

competing with developed market firms with their existing advantages (Mathews, 2006; Athreye and Kapur, 2009). Consistently, Guillen and Garcia-Canal (2009) theorize that the key feature of the expansion path into developed countries is for upgrading capabilities. They argue that latecomers "must enter more advanced economies in order to expose themselves to sophisticated, cutting-edge demand and develop their capabilities". When targets are located in advanced economies, acquirers may voluntarily bootstrap themselves into a higher corporate governance standard of the target (Bhagat et al., 2011; Martynova and Renneboog, 2008; Khanna and Palepu, 2004).

Additionally, various studies indicate that the strategies of acquirers from non-developed markets are different from those in developed countries. Instead of seeking outright improvement in operating efficiency, acquirers in India, for instance, seek strategic assets in cross-border acquisitions in order to facilitate the organizational transformation of their firms (Gubbi et al., 2010). Gubbi and colleagues argue that foreign acquisitions is an important mode of internationalization as it enables acquiring firms in emerging economies to gain access to critical assets of the target company when given the problems in the transactions of intangible assets and capabilities through market mechanisms. They went on to argue that critical assets from acquired firms in developed countries are especially more valuable since the advanced institutional environment in developed economies is a promised land for high quality resources. Along with Indian bidders, acquirers in China use cross-border acquisitions to gain access to strategic capabilities in order to leverage their particular type of

ownership advantages (Rui and Yip, 2008). According to Rui and Yip (2008), the ownership advantage of Chinese acquirers is chiefly the low cost of labour, whereas strategic assets in developed economies can leverage such an advantage.

Finally, firms may seize control of certain technology to block access of their rivals or to unblock a technology barrier of a certain line of business. However, blocking rivals from accessing strategic technology is unlikely to be the core motive of bidders in non-developed markets as they are still in the infant stage of technology development (World Bank, 2008) and their positions in technology-intensive markets might be far away from a monopoly or oligopoly. Rather, the motive seems to lean towards breaking the technology barrier of developed economies. Taking over firms in developed markets and controlling their ownership advantage in technology might serve as "springboard" for the acquirer to gradually consolidate their competitive positions in the global market. Luo and Tung (2007) find that emerging-market firms systematically and recursively acquire critical assets via international expansion. Therefore short term profitability might not be a priority for these firms as they may consider international markets as just learning laboratories which facilitate the transfer of knowledge-based capabilities across countries (Hitt et al., 1997; Almeida, 1996; Chang, 1995; Doz, Santos and Williams, 2001).

With the above lines of arguments, we find the strategic market entry framework more persuasive in explaining the motivation of acquirers in non-developed markets.

2.2.4. Resources and entry strategies

We argue in this section that if emerging-market firms are motivated by intangible resources then the acquisition mode of entry is more suitable than other modes due to several advantages that are pertinent to the institutions of target firms in developed economies. Firms can simply buy wanted resources in the foreign market, they can find local partners to form joint venture, or they can choose acquisitions. However, direct purchase of intangible assets from developed markets may be a costly transaction due to the *tacitness of knowledge.* Certain knowledge-based assets can only be transferred if experts of buying and selling parties interact directly in the form of learning by doing. Such transfer is either difficult to organize in cross-border transactions or very costly (Teece, 1977). As a result, transactions involving tacit knowledge may be more effective when they are internalized within an organization in the form of acquisition (Kogut and Zander, 1993; Meyer et al., 2009). In addition, owing to weak institutional enforcement in the protection of intellectual property rights in emerging countries, firms in the developed world might be reluctant to sell their intangible capabilities via a resources exchanges market for fear of incomplete contract problems (Grossman and Hart, 1986; Hart and Moore, 1990; Hart and Moore, 2006; Gattai et al., 2010). Under such circumstances, acquisition is a more viable choice since it entitles acquirers with the control of residual rights of ownership and facilitates internalisation of the technology transfer.

The joint venture mode of entry also entails similar problem to incomplete contracts. When business partners invest substantially in specific resources, they are exposed to interdependencies and opportunistic behaviour (Brouthers and Hennart, 2007; Brouthers et al., 2003). Weak institution in non-developed markets increases the severity of this threat, thus favouring the acquisition mode of entry.

Besides the mentioned advantages of acquisitions, Rui and Yip (2008) argue that mergers and acquisitions is a preferred route for Chinese firms as they need to acquire multiple capabilities simultaneously (i.e. technological, managerial and marketing). These firms are also under increasing pressure to catch up with such capabilities of foreign competitors operating in China. Meanwhile, in-house research and development is not a quick alternative to building high quality technological resources given the limitations of the weak institutional environment in less developed countries. Therefore acquisition is a favourable route which meets various requirements in the expansion strategy of firms in non-developed markets.

Following these lines of argument we have established a strong link between acquisition and a motivation for strategic assets, in that when acquirers are motivated by such assets they are more likely to use acquisition than other modes of entry. This theoretical link lends support to our main argument that the dominant motive of our context-specific acquisitions is to gain access to strategic assets.

In the next section, we present our hypotheses.

2.2.5. Hypothesis establishment

2.2.5.1. Intangible assets

Intangible assets embrace a wide variety of aspects, but technology and human capital are the cores of intangible assets (Kramer, 2011; Kaplan and Norton, 2004). In the previous section, we argue that firms in non-developed markets are primarily driven by strategic assets (i.e. technology and quality management) in the acquisitions of targets in developed countries. Accordingly, it is plausible to postulate a link that targets with a higher stock of intangible assets are more likely to be acquired by emerging market firms. Nonetheless, if acquirers in emerging countries are driven by external resources in more advanced markets they might as well take into account their limited absorptive capacity (due to the significant technology gap) and their lack of commitment in offshore investments. As a result, there might be a threshold in the level of technology under which acquirers in emerging countries can absorb intangible assets efficiently. Indeed, Chen and Su (1997) compare the characteristics of targets in cross-border and domestic acquisition in the US and find that cross-border targets tend to have lower R&D expenditures than that of domestic targets. This evidence indicates that non-US bidders do not target technology-intensive firms. Moreover, Archibugi and Pietrobelli (2003, p.98) find that *"from the side of the host countries, the technological activities of large foreign firms are most strongly established in fields of relative national weakness in Canada, France, Germany and USA".*

Finally, "*second-class*" capabilities from advanced economies might be adequate for firms in non-developed countries. Besides the technology gap, the reason for this is that when developed-market firms venture into less developed markets they are unlikely to bring their best capabilities as they need to retain such assets in their own markets, where competition is fierce. Similarly, firms in non-developed markets may not require the latest technology from advanced countries to stay competitive in their local markets. One might argue that technological assets have public-good characteristics, therefore transferring such assets overseas may not weaken their competitive capacity at home. However, when transferring intangible assets overseas, especially to countries with weak enforcement of property rights, there is a significant risk that know-how and technologies can be leaked to their competitors. Furthermore, management capability in the form of human capital is not always a public-good asset since the best managers may wish to remain in a more competitive environment and are unwilling to relocate to less competitive markets.

Therefore, we hypothesize that:

> *Developed-market targets with the value of intangible assets under a certain threshold level are more likely to be acquired by acquirers from non-developed markets.*

2.2.5.2. Target size

Besides limited absorptive capacity, acquirers in non-developed markets might also need to account for the high levels of risk in their strategic cross-border acquisitions. Mathew (2006) argues that small- and medium-sized firms motivated by external resources are exposed to high levels of risk in internationalization. They therefore tend to offset risks by choosing joint ventures and partnerships rather than wholly-owned subsidiaries as a mode of entry. This argument suggests that when facing a high level of uncertainties in cross-border transactions, firms lacking initial resources are likely to start with a small stake as they would avoid substantial loss when things go wrong. With low commitment in advanced markets, resource-driven acquirers from non-developed markets have two options when they plan to tap into more advanced markets. One is to acquire considerable shares of small targets, and two is to seize a small stake of ownership from large corporations. The second choice is less likely to grant the acquirer access to strategic resources, especially when such resources are intended for use in non-developed countries. Weak intellectual property rights protection in less developed countries often fails to guard against technology dissipation. As a result, target firms are unwilling to share technology and know-how for investors from the developing world. However, acquiring firms can force the target to transfer technology via acquisitions for control. When control rights of the firms are transferred from targets to acquirers, the acquirers, by definition gain access to all of the information available to incumbent targets management. Therefore, through acquisitions for the control of small firms

rather than the minority stake acquisition of a large target, acquirers may gain access to the key resources of the targets.

In addition, target size has been the most persistent variable to distinguish acquired and non-acquired firms (Cosh et. al., 1989). The traditional negative relationship between target size and probability of acquisition is often associated with transaction costs view. Transaction costs cover expenses in the process of merging a targets assets into a bidders organization and the cost to deal with the defense mechanism activated by the targets management (Harris and Robinson, 2002; Palepu, 1986). These costs increase with the targets size and might escalate rapidly in the cross-border context, thereby leading to a decrease in the acquisition likelihood. Therefore, we hypothesize that:

> *Non-developed acquirers are more likely to aim at small firms in developed markets than non-acquirers and acquirers from developed countries.*

2.2.5.3. Control variables

Operating performance

Operating performance of the target firm has been associated with the motivation of the acquiring firms (Cosh et al., 1989; Palepu, 1986; Thompson, 1997; Zhu et al., 2011). The difference in performance between target and non-target may imply two different motives. According to the corporate control hypothesis, acquiring targets with a relatively low operating performance compared with that of the non-target suggests that acquirers are motivated by replacing the targets managers who fail to maximize the

firms value. Palepu (1986) find that inefficient firms in the US are more likely to become takeover targets. However, Palepu did not distinguish domestic and cross-border acquisitions, so the positive link between low performance and acquisition likelihood probably holds in domestic acquisition. Indeed, Zhu et al., (2011) examined the partial acquisition activity that involved targets in emerging countries and found that only domestic acquisitions lead to a significant increase in returns on assets (a popular proxy of operating performance). In cross-border acquisitions, however, Zhu and his colleagues find that acquirers are more likely to choose targets with good performance prior to the acquisition, perhaps because a strong performance record implies quality resources.

Operating performance may not be an important discriminator between targets and general companies. In a study of UK markets for corporate control in the 1980s, Cosh et al. (1989) conclude that short/long-run profitability or stock return cannot discriminate targets from non-targets. Instead, they find that size remains the most important discriminator.

Therefore profitability is a potential determinant of acquisition. However, whether it is significant or not depends on the markets where the acquisitions take place and on the type of acquisition (i.e. domestic or cross-border acquisition). Since we argue that the motive of acquirers in this study is to access quality resources in developed markets, it is plausible to hypothesize that more profitable targets (hence higher quality assets) are more likely to be acquired.

Market valuation

Market valuation of target firms may be positively or negatively related to the probability of acquisition. On one hand, a low market-to-book ratio suggests the target is a "cheap buy" and has the potential to increase in value. Therefore, firms with low market valuation are more likely to be acquired (Palepu, 1986). On the other hand, a high market-to-book ratio may imply that firms have a great stock of intangible assets and investment opportunities (McNichols and Stubben, 2009), which makes the firms attractive to acquirers driven by gaining control of quality resources. In the context of this study, we argue that acquirers may be motivated by intangible assets, thus favouring high market-to-book targets. They may also be motivated by exposing themselves in the advanced markets and learning new capabilities in the form of practicing in developed countries. In the latter case, going for "cheap" firms could be a good start as it allows acquirers in less developed countries to quickly submerge into the new business environment. In brief, market valuation is a potential determinant of acquisition. However, we cannot speculate the sign of this variable in our theoretical model.

Level of cash holding

Cash is a cheap source of funding compared to alternative financial tools such as borrowing from financial institutions, issuing bonds or stock offering. Therefore cash-rich firms are attractive in the acquisition market because acquirers can use the targets cash to finance their ongoing projects. Furthermore, by aiming at cash-rich firms,

bidders may use the targets cash to even partially finance the acquisition by using the resources of the target itself (Song and Walkling, 1993), thus increasing the chance of successful acquisition. When acquirers have a limited source of financing such as companies from emerging markets, cash is even more important (Petrova and Shafter, 2010). It is therefore plausible that the level of cash holding is a potential positive determinant of the acquisition decision.

Growth rate and financial leverage

Targets growth rate and financial leverage may affect the probability of acquisition in different ways. Low financial leverage implies high borrowing capacity which attracts bidders seeking financial resources. Safieddine and Titman (1999) find acquired firms have significantly lower financial leverage. Meanwhile, low growth indicates inefficient management (Palepu, 1986; Smith and Watts (1992). Therefore, targets with these characters are likely to be acquired. In addition, the mismatch between growth rate and financial slack can also determine acquisition probability. Targets that seize good investment opportunities but lack financial resources attract bidders with excessive financial slack as the combined firm can boost the shareholders' value of both parties (Myers and Majluf, 1984). As a result, growth rate and financial leverage are included in our model as control variables.

2.3. Methodology

2.3.1. Examination of targets characteristics

There are two different ways to examine the motivation for strategic assets of the acquiring firms. The first method is to find the characteristics that determine the difference between the target and non-target prior to the acquisition. Such characteristics can be firm size, leverage ratio, liquidity, growth, profitability, market-to-book ratio, research and development expenditure and productivity. If, for example, a targets profitability is lower than that of the non-target, it would suggest that the motivation of the acquiring firm is to seek and replace inefficient management (Zhu et al., 2011; Thompson, 1997). Alternatively, we can compare and detect the difference in the characteristics of acquirer and non-acquirer in the same manner. For instance, if acquirers generally have a larger stock of intangible assets than that of the non-acquirer, it suggests that acquiring firms are motivated by exploiting their technological advantage in the new market. In this paper we follow the first route, since the target firms in our examination are located in developed countries. Better data availability in developed countries allows us to investigate and control for a wider range of characteristics. If we follow the second route, we can only investigate a few characteristics (e.g. firm size, market-to-book and cash ratio) because the firm level data of acquirers in non-developed countries are rather limited.

In brief, we examine the motive of acquiring firms by finding the characteristics that differentiate target and non-target in developed countries. Such an examination is conducted within a multinomial logistic regression methodological framework.

2.3.2. Multinomial logistic regression approach

2.3.2.1. Advantages of multinomial logistic regression

The multinomial logistic regression technique is employed in this study because of its inherent advantages over alternative techniques such as OLS or linear discriminant function analysis. According to Tabachnick et al. (2001), this approach has three advantages: (1) it is more robust to violations of assumptions of multivariate normality concerning both dependent and independent variables; (2) it does not assume a linear relationship between independent and dependent variables; and (3) it does not assume normal distribution of the error term (Bayaga, 2010). Bayaga argues that this approach is better when the model comprises dichotomous variables or their distributions have "fat tails," as these violate the normality assumption. Since our dependent variable is categorical in nature and our model considers both continuous and dichotomous independent variables, multinomial logistic regression would be more suitable for this investigation.

2.3.2.2. The basics of multinomial logistic regression

Our model specification is as follow:

$$Prob\ (Y_i = j) = F(Intangible, size, control\ variables) = F(X_i) \quad \text{Eq. 2.1}$$

Where:

$i = \{1\ to\ N\}$ (N is the number of targets in the sample)

Y_i: $outcome\ of\ dependent\ variable$

The dependent variable has three alternative outcomes (j):

$j = 0$: developed-market firm not acquired (non-target)

$j = 1$: acquirer and target both located in developed markets

$j = 2$: developed-market firm acquired by bidder from non-developed markets

The probability of each alternative:

$$Prob\ (Y_i = 1) = \frac{\exp(\beta_1 X_i)}{1 + \exp(\beta_1 X_i) + \exp(\beta_2 X_i)}$$

$$Prob\ (Y_i = 2) = \frac{\exp(\beta_2 X_i)}{1 + \exp(\beta_1 X_i) + \exp(\beta_2 X_i)}$$

$$Prob\ (Y_i = 0) = \frac{1}{1 + \exp(\beta_1 X_i) + \exp(\beta_2 X_i)}$$

Thus, the odds of choosing alternative j over the basement alternative *(j=0)* is defined as:

$$\frac{P_{ij}}{P_{i0}} = \frac{Prob\ (Y_i = 1)}{Prob\ (Y_i = 0)} = \exp(\beta_j X_i)$$

The log odds ratio is then:

$$ln\left[\frac{P_{ij}}{P_{i0}}\right] = \beta_j X_i \qquad \text{Eq. 2.2}$$

After the transformation, the logistic regression now bears a linear regression form.

In essence, the multinomial logistic model is equivalent to a set of simultaneous binomial logistic regressions where the parameter vector (β) are also estimated by a maximum likelihood technique (Green, 2000). The estimation procedure of multinomial logistic regression, by definition, yields two sets of parameters in case of three alternative outcomes of dependent variables. These two sets in this particular study are: (1) one that represents the difference between the characteristics of firms acquired by non-developed acquirers (j=2) and those of firms acquired by developed-market bidders (j=1); and (2) one that represents the difference between characteristics of firms acquired by non-developed markets (j=2) and those of non-targets (j=0). The basement alternative in this case is actually targets of non-developed markets firms (j=2) rather than the regular non-targets in developed countries (j=0). Statistical software (e.g. STATA) facilitates the switch of the basement alternative with ease. However, when switching the base category to one with very low frequency compared with other alternatives, the maximum likelihood procedure may have problems in estimating parameters. To overcome this problem, the multinomial logistic regression may need to

run twice, where the base category is in turn set to case j=0 then j=1 (as the frequencies of these alternatives are much higher). Additional evidence from pair-wise binomial logistic regressions are also included in this paper for robustness check.

2.3.2.3. IIA assumption and multicollinearity issue

In a multinomial logistic regression framework there is an implicit assumption that the odd between any pair of alternatives is *independent of irrelevant alternatives (IIA)*. In this paper, this assumption means that the introduction of any alternative (0 or 1 or 2) does not change the pair-wise relative odd of the other alternatives. This issue is dealt with by the employment of a Hausman-type specification test which checks the violation of IIA assumption[3].

Another issue in the implementation of logistic regression is multicollinearity, which is perhaps inevitable in studies that include multiple financial ratios in the covariate vector. To deal with this issue, the literature of financial economics suggests that covariates should be included in the model on the ground of related theories rather than including all possible ratios and using a technique such as stepwise regression to resolve the collinearity problem (Thompson, 1997). The reason for this is that employing an entirely data-driven technique might yield unexplainable models or irrelevant relationships as the pair-wise regression may require a complicated transformation of variables in order to fit models to the data. This paper therefore tries to avoid such a passage and inclines to the selection of covariates upon theoretical models. The latter

[3] *See Hausman and McFadden (1984).*

approach is also more suitable in identifying the motivation of acquirers while building a predictive model and will perhaps better serve the quest for the potential target. The multicollinearity is to be checked with the variance inflation factor (VIF) method.

2.3.2.4. State-based vs. random-based sample

With regards to data sampling, the literature offers two possibilities for the formation of the sample: random-based and state-based. In the state-based sample, the sample is a multiple of groups, each of which contains data of the target and several non-targets. Meanwhile, the random-based sample sets no limit on the number of non-targets in each group, making it substantially larger than the otherwise state-based sample. The state-based sample has been used in a number of studies which seek to build predictive models (Tsagkanos et. al., 2009; Espahbodi and Espahbodi, 2003; Palepu, 1986). The rationale of state-based sampling is that when the population is dominated by a certain state of acquisition (usually non-acquisition state) the logistic regression may yield imprecise estimates due to the dilution of 'information content'. Therefore if the population is dominated by 0 (i.e. non-acquisition state), it will technically be very difficult and usually inefficient in the determination of characteristics that discriminate alternative acquisition states. As a result, under 'imbalanced' circumstances using a state-based method can balance the alternative states of acquisition and produce more precise estimates (Palepu, 1986). However, this approach also implies that in balancing the sample there is a high probability that *any* target can enter the sample, which makes it unreliable to generalize on the population level (Thompson, 1997). Given this trade-

off, we lean toward the random-based formation and use data of all of the publicly-listed targets and non-targets in developed countries since the subsequent result from this formation is more generalizable.

2.3.3. Control for fixed effects and outliers

The nature of our sample involves cross-country, cross-industry data over a long period of time. We control for time fixed effects by including year dummies, as these variables can capture the difference in the dominant motive in different waves of mergers. We would also like to control both country and industry fixed effects. However, we also avoid introducing too many dummy variables into the equation since it causes a decrease in the degree of freedom, and as a result can negatively affect the power to detect differences. We therefore control for industry fixed effects and country fixed effects in separate model specifications. The industry dummies are derived on the basis of a one-digit SIC code since the classification on two- or more digits of SIC code dramatically reduces the number of firms in each industry, effectively cancelling out the control for industry fixed effects. To deal with the effects of outliers, this study uses a winsorization procedure to trim extreme values off continuous variables. More specifically, each continuous variable is sorted from high to low and ***0.05%*** of the range at each upper or lower end is removed. This cut-off value is chosen so that the histograms of the continuous variables do not have "fat tail". In addition, in order to control for the impact of outliers in the non-target group we once again trim the sample with regard to firm size so that the minimum and maximum sizes of non-target group

stays within those of the target group. The latter strategy is adopted from a current study (Zhu, et. al., 2011) as it is in line with a norm that too big or too small firms are very unlikely to be acquired.

2.3.4. Proxies of intangible assets

As ownership of targets intangible assets is hypothesized to be one of the most important motives in cross-border acquisitions, we intend to use different proxies to test the effects of targets intangibles on the probability of being acquired. Due to the nature of intangibles the direct measure of this variable is generally not available. According to accounting principles, the intangible item only appears on a balance sheet if the firm has acquired something in the past and the difference in the market and book value of the target is booked as intangible. As a result the intangible item in the balance sheet does not include the intangible value of the acquirer itself before they engage in any acquisition. As a result, we consider three indirect measures of intangible that are widely used in the literature: technology inputs (R&D expenditure), technology outputs (number of patents), and the effects of technology (i.e. higher productivity) (Keller, 2004).

Each measure entails advantages and disadvantages in capturing the true value of a firms technology. For instance, R&D is a noisy measure of technology because innovation is a stochastic process, whilst R&D data is often captured at a certain point in time. Therefore current R&D expenditure might not accurately reflect the technology level of the firm. Moreover, R&D expenditure varies substantially across countries,

industries and agents, which may limit the comparability of technology levels among targets in the sample.

Intangible assets can, alternatively, be measured as the number of patents owned by a firm. However, holding a large number of patents does not necessarily mean a high technology level as not all patents have the same value. In fact, a small number of patents account for most of the value of all patents. In addition, not all of the innovations are patented as some might lurk in the form of business know-how. Finally, patents might be the observable tip of an iceberg, while the unobservable might be "*non-codifiable*" due to its intangible nature (Keller, 2004).

Finally, total factor productivity (TFP) is a derived measure of technology. TFP, by definition, is the portion of output not explained by the amount of inputs used in production. "*TFP level is determined by how efficiently and intensely the inputs are utilized in production*" (Comin, 2006). This proxy is predicted on the basis of production outputs, inputs and intermediate goods (Levensohn and Petrin, 2003). As the physical quantities of these factors are generally unobservable, TFP is often estimated by using values of such physical quantities. As a result, TFP fails to distinguish between price mark-up and productivity level (Katayama et al., 2003). Given the drawback of the TFP measure, one possible strategy is to consider changes in TFP rather than TFP levels which can control for some "spurious factors" that rarely change over time (Keller, 2004).

Since the data for the number of patents is not available, this paper uses R&D expenditure and TFP as the alternative proxies for intangible assets. While R&D expenditure items can be picked up in annual financial statements, TFP requires more complicated steps to estimate.

2.3.5. TFP estimation

The estimation of production function has been one of the most common objects of interests for the economists (Levinsohn and Petrin, 2000). The major concern in the estimation is the potential correlation between unobserved productivity shocks and inputs level. The productivity shocks are unobservable by the econometrician but are observable by the firms. In response to positive productivity shocks firms are likely to increase the level of inputs. If the correlation between productivity shocks and inputs exists then using OLS will yield biased and inconsistent estimates. To resolve this "*simultaneity"* problem several approaches have been used in the literature, including a fixed effects estimator, investment proxy (Olley and Parks, 1996), intermediate inputs proxy (Levinsohn and Petrin, 2003) and GMM estimator (Blundell and Bond, 2000).

This study follows the procedure of Levinsohn and Petrin (2003), where intermediate input[4] is used as a proxy to control for the unobserved correlation between productivity shocks and inputs. Levinsohn and Petrin (2000) illustrate that intermediate input can smoothly track the productivity shocks. In their words "*intermediate inputs will generally respond to the entire productivity term while investment may respond only to*

[4] *Complete goods and services used in the production process. For instance, costs of fuel, electricity or materials expense (Levinsohn and Petrin, 2000).*

the "news" in the unobserved term". Therefore the advantage of intermediate proxy compared to investments proxy as in Olley and Parks (1996) is that the former can capture the entire productivity shocks while the latter only deals with part of the shock, meaning that partial endogeneity still remains. The approach using instrumental variables to cope with endogeneity is an alternative, but finding one that both correlates with inputs and is orthogonal with productivity shock is a difficult task and valid instruments do not always exist. Finally, assuming productivity shocks are constant over time as in a fixed effects approach may be too much to ask (Levinsohn and Petrin, 2000).

Although the literature has not settled on which method is the best in dealing with the simultaneity problem, Levinsohn and Petrin's (2003) approach appears the most suitable one for this study for several reasons. First, it enables us to use more of the existing data as Olley and Parks's (1996) approach requires investment higher than zero to be valid, whilst dropping zero-investment firms dramatically reduces sample size and can lead to potential bias. Second, the intermediate inputs are also generally more available and more likely to be positive. Finally, finding instrumental variables in the context of limited data or unreasonably assuming fixed productivity shocks is not a preferred choice. Therefore, we employ Levinsohn and Petrin (2003)'s approach and use *firms material expense* as the proxy for intermediate input.

Levinsohn and Petrin (2003) estimate total factor productivity based on the Cobb-Douglas production function. If the intermediate input is used to control for simultaneity the function bears the following form:

$$y_t = \beta_0 + \beta_k k_t + \beta_l l_t + \beta_m m_t + \omega_t + \eta_t \qquad \text{Eq. 2.3}$$

Where:

y_t is the logarithm of output which is value-added

l_t is the logarithm of labour input

m_t is the logarithm of immediate input (material expense)

k_t is the logarithm of capital

The error term has two components: ω_t and η_t. η_t is uncorrelated with input choice. However, ω_t is correlated with input choice and unobservable by econometricians, thus causing a simultaneity problem. Ignoring ω_t yields inconsistent results in the estimation of production function (Levinsohn and Petrin (2004).

Levinsohn and Petrin argue that ω_t is determined by capital and intermediate input: $\omega_t = \omega_t(k_t, m_t)$. Thus, we can rewrite Eq. 2-2:

$$y_t = \beta_l l_t + \phi_t(k_t, m_t) + \eta_t$$

$$\phi_t(k_t, m_t) = \beta_0 + \beta_k k_t + \beta_m m_t + \omega_t(k_t, m_t) \qquad \text{Eq. 2.4}$$

This model specification is then estimated with a value-added or gross revenue method (See Levinsohn and Petrin, 2004). However, we only proceed with the value added method as it yields significant parameters, therefore generating better TFP estimates.

2.3.6. Additional dummy variable: hightech

We include an additional binary variable of *hightech* in the logistic regression. This variable is generated on the basis of the proxy of intangible assets (i.e. R&D expenditure or TFP), while fixing the year of acquisition and targets one-digit SIC code in an attempt to control for time and industry fixed effects. It receives value 1 if the target has above the median of intangible proxy and set to zero otherwise. In accordance with the theoretical framework, if the acquirer is motivated by the targets intangible assets they will be more likely to aim at "high-tech" firms in that industry. However, such a norm might be compatible with domestic acquisitions or cross-border acquisitions among developed economies. It might be a different case when acquirers and targets belong to different leagues in terms of technological capabilities. As the technology gap between developed-markets and non-developed-market firms are remarkable on average, attempt to control firms with a high value stock of intangible assets may inhibit the absorptive capacity of the acquirers. Inversely, acquiring firms with a lower stock of intangibles could be more manageable or less overwhelming for the acquirers in less developed countries. Therefore, we expect a negative effect of this binary variable on the probability of acquisition.

It also noteworthy that *hightech,* despite being a supplement for the proxy of intangible assets, is more likely to capture the pattern of the acquirers motive than other continuous variables, especially in the cross-border context which involves a wide range of industries and countries and is across multiple periods of time. The intuitive reason is

that a simplified binary variable may be more effective in detecting patterns in a sample that embeds a great deal of complexity.

2.4. Data

2.4.1. Data requirement for TFP estimation

According to Levinsohn and Petrin (2003), TFP estimation requires output, quantity of labour, capital and proxy for intermediate inputs. We use net sales to proxy output and the number of employees to measure of labour quantity. We also use the total net value of property, plant and equipment accounted for reserves for depreciation, depletion and amortization as a proxy for physical capital. Finally, an inventory of raw material[5] is used as a proxy for intermediate input. Regarding the proxy for intermediate inputs, WorldScope database offers two choices: inventory of raw materials and material expense. The latter item is, by definition, perhaps a better proxy for intermediate inputs than the former as it represents the amount of raw material that has actually gone into the production process. However, screening for material expense reduces the sample size dramatically. It also breaks the well-perceived structure of population, where the US and UK usually have the greatest number of observations. Therefore we use raw material as a proxy for intermediate input and assume that the year-end balance of raw material inventory reflects the annual requirement of the firm.

[5] *RAW MATERIALS represent the inventory of raw materials or supplies which indirectly or directly enter into the production of finished goods (Worldscope database glossary).*

Table 2.1: Distribution of firms in developed countries

Country	Number of firms	Year	Number of observation
USA	4,840	1980-1990	8,628
Japan	2,054	1991	4,169
UK	1,805	1992	4,293
Germany	697	1993	4,543
France	679	1994	5,178
Canada	551	1995	5,207
Australia	506	1996	5,331
Italy	311	1997	5,498
Austria	209	1998	5,905
Swiss	198	1999	5,657
Sweden	188	2000	5,357
Netherlands	178	2001	5,483
Spain	152	2002	5,441
Finland	132	2003	5,392
Denmark	129	2004	5,394
Belgium	112	2005	5,370
Norway	109	2006	5,108
Portugal	81	2007	4,924
Ireland	80	2008	4,620
Greece	78	2009	5,455
New Zealand	41	2010	5,369
Total	**13,130**	**Total**	**112,322**

The data for TFP estimation forms an unbalanced panel. As shown in Table 2.1, it comprises a series of annual observations of 13,130 firms in developed countries. The time series for each firm begins from 1980 to 2010, depending on data availability. The total number of annual observations is 112,322, and each observation contains information of net sales, physical capital, employee number and raw materials which enables the estimation of TFP. The distribution of the number of firms by country in the sample is in line with the common perception that the most advanced economies often have the greatest number of observations.

TFP is estimated by Levpet software developed by Levinsohn and Petrin (2003). Table 2.2 illustrates the result of the estimation using the default value-added method. The estimated TFP from this estimation is the variable of interest for further analysis. It is noted that the sum of the coefficient is reported as the result of a Wald test of constant return to scale (Levinsohn and Petrin, 2004). The sum is significantly less than one, implying that firms in developed economies generally have diminishing returns to scale. In addition, the average number of observations per group is 8.6 indicates that the sample has about 8 annual observations for each firm on average, even though the panel is unbalanced.

Table 2.2: TFP estimation with Levensohn-Petrin productivity estimator

Parameters	Coefficient		P value	Chi2
lnlabour	0.5614273	***	67.12	
lncapital	0.2391428	***	18.8	
Sum of coefficients	0.8005701	***		394.3
Number of observation	112322			
Number of group	13130			
Average obs. per group	8.6			

**** Significant at 1% level*

Note: sum of coefficients is significantly less than 1, suggesting diminishing returns to scale for these firms

2.4.2. Sample description

Two samples are used in this paper: RD sample (including research and development expenditure as a proxy for intangible assets) and the TFP sample, where total factor productivity is used as the proxy. Besides this, the difference in proxy for intangible assets, dependent variables and other explanatory variables such as size, market-to-book, cash ratio, leverage and growth are essentially the same between the two samples. Alternative measures for intangibles are used since acquiring intangible assets

has been argued as being one of the most important motives in cross-border acquisitions, therefore using different proxies increases the robustness of the result.

2.4.2.1. Distribution of targets in the sample

We have two sampling situations: RD sample and TFP sample. Each sample is constructed as an unbalanced panel of target firms in which each firm has a series of annual records. In any sample there are three types of target with the following code: Non-targets (coded 0), targets of developed-market firms (coded 1), and targets of non-developed-markets firms (coded 2).

Only publicly-listed targets in developed countries are included in the sample. Private targets are excluded since we have no data on the characteristics of these firms.

We present the distribution of transaction frequency by groups of targets (Table2.3), by year (Table 2.4) and by country of the target (Table 2.5). In Table 2.3, both RD and TFP samples represent the commonly perceived structure of population where there is a remarkable imbalance between the non-target and target groups. Even within the target group, the number of firms acquired by the non-developed market bidders is also much smaller than that of firms acquired by the developed-market bidders. The TFP sample is smaller than the RD sample because the data requirement for TFP estimation is more rigorous. Table 2.4 shows the frequency of acquisition transactions by years for three groups of targets (0, 1, and 2). This table suggests a rising trend of acquisitions over the last two decades. Table 2.5 presents the distribution of transactions by target

countries for each target group. It is not surprising to see that G7 countries and Australia have the largest number of firms acquired by both developed and non-developed markets bidders since these countries are the most dynamic markets of corporate control.

Table 2.3: Distribution of target type

RD sample[6]			
Target type	Alternative	Frequency	Percent
Non-target	0	29,277	87.51
Dv-target	1	4,076	12.18
Nd-target	2	102	0.3
Total		**33,455**	**100**
TFP sample[7]			
Target type	Alternative	Frequency	Percent
Non-target	0	22,115	88.7
Dv-target	1	2,734	10.97
Nd-target	2	83	0.33
Total		**24,932**	**100**

Dv-target: firms acquired by developed-markets acquirers

Nd-target: firms acquired by non-developed-markets acquirers

Alternatives 0, 1, and 2 are the corresponding codes for each target type

[6] *Sample where R&D expenditure is used as a proxy for intangible assets.*

[7] *Sample where TFP is used as proxy for intangible assets.*

Table 2.4: Tabulation of sample by year and target type

TFP Sample					**RD sample**				
Year	**Alternative**			**Total**	**Year**	**Alternative**			**Total**
	0	**1**	**2**			**0**	**1**	**2**	
1989	190	48	0	238	1989	360	97	1	458
1990	233	65	1	299	1990	183	66	0	249
1991	313	69	0	382	1991	241	62	0	303
1992	325	62	4	391	1992	244	60	3	307
1993	379	90	2	471	1993	273	92	3	368
1994	714	119	1	834	1994	604	117	1	722
1995	755	125	1	881	1995	658	126	1	785
1996	424	85	1	510	1996	326	90	0	416
1997	541	88	1	630	1997	444	91	0	535
1998	381	59	3	443	1998	405	70	3	478
1999	428	72	4	504	1999	492	102	5	599
2000	1,148	103	1	1,252	2000	1,372	133	4	1,509
2001	954	63	2	1,019	2001	1,093	90	0	1,183
2002	1,121	89	4	1,214	2002	1,217	111	3	1,331
2003	1,165	98	3	1,266	2003	1,350	114	3	1,467
2004	1,235	110	1	1,346	2004	1,485	136	2	1,623
2005	1,686	196	7	1,889	2005	2,800	358	11	3,169
2006	1,763	222	10	1,995	2006	3,025	471	18	3,514
2007	1,444	198	11	1,653	2007	1,994	330	15	2,339
2008	1,933	310	10	2,253	2008	3,546	630	18	4,194
2009	2,463	350	11	2,824	2009	3,579	558	8	4,145
2010	2,520	113	5	2,638	2010	3,586	172	3	3,761
Total	**22,115**	**2,734**	**83**	**24,932**	**Total**	**29,277**	**4,076**	**102**	**33,455**

Note: There is an increasing trend of cross-border acquisition over the years. The rising trend of acquisition in developed economies from less-developed markets firms is especially noteworthy. Alternatives 0, 1, and 2 are the corresponding codes for each target type.

Table 2.5 Tabulation of sample by country and type

TFP sample					**RD sample**				
Country	**Alternative**			**Total**	**Country**	**Alternative**			**Total**
	0	**1**	**2**			**0**	**1**	**2**	
US	10,661	1,373	34	12,068	US	15,273	2,073	48	17,394
UK	3,998	167	14	4,179	JP	6,460	907	13	7,380
JP	2,104	176	1	2,281	UK	2,704	135	9	2,848
FR	1,386	189	4	1,579	CA	1,194	190	7	1,391
WG	916	131	8	1,055	FR	846	123	0	969
CA	501	86	3	590	WG	614	119	9	742
IT	360	98	0	458	AS	601	8	0	609
SZ	303	49	2	354	SZ	243	44	1	288
AS	336	12	1	349	AU	60	212	9	281
IR	308	13	0	321	FN	196	32	2	230
NT	178	74	2	254	SW	177	40	1	218
BL	226	25	0	251	IR	203	12	0	215
SP	149	92	2	243	NT	140	37	1	178
AU	78	131	7	216	BL	145	15	0	160
FN	178	35	2	215	IT	100	46	0	146
SW	153	37	0	190	NO	98	27	1	126
DN	160	14	2	176	DN	107	13	1	121
NO	114	25	1	140	NZ	89	22	0	111
NZ	6	7	0	13	SP	27	21	0	48
Total	22,115	2,734	83	24,932	Total	29,277	4,076	102	33,455

Note: Targets of non-developed markets firms concentrates on G7 countries and Australia. Alternatives 0, 1, and 2 are the corresponding codes for each target type.

2.4.2.2. Distribution of targets in the sample

Tables 2.6 and 2.7 present the descriptive statistics of the independent variables and compare the corresponding median across three groups of target for the RD and TFP samples respectively. Panel A shows the differences in characteristics between ND targets (targets acquirers from non-developed markets or group 2) and non-targets (group 0), and Panel B shows the difference between ND targets and DV targets (targets of acquirers in developed countries or group 1). As the histograms of independent variables show signs of extreme values despite being handled by a winsorization technique, we use the median tests rather than a mean test to check the difference in characteristics for each set of two groups.

There are some noteworthy features in the samples. First, Tables 6 and 7 both consistently show that ND targets generally have a significantly lower return on assets than both DV targets and non-targets, which surprisingly lends support to the conventional market for corporate control hypothesis. Secondly, low-tfp firms seem more likely to be acquired by non-developed markets bidders, as shown in Table 7, suggesting that acquirers aim at firms with a small stock of intangible assets. In addition, panel A in both Tables illustrates that ND targets have significantly smaller size than non-target, which is in line with our expectation. Finally, there is a remarkable sign that ND targets have a higher leverage ratio than DV targets (as shown in panel B of both tables). High leverage in developed markets may imply unused borrowing capacity

(Espahbodi and Espahbodi, 2003), which could then attract bidders lacking financial resources.

Table 2.6: Comparison of pre-acquisition characteristics in RD sample

Note: This table compares the characteristics pre-acquisition of three groups in the sample (nontargets - group 0, targets of non-developed bidders - group 2, and targets of developed bidders - group 1). All theoretically significant explanatory variables are examined including operating performance (roa), technology level (r&d expenditures/sales), hightech target (binary variable), financial leverage (Total debt/Shareholders' equity), growth potential (three year sales growth), market valuation (market-to-book), cash holding (cash/total assets), and size (log of total assets). These variables are winsorized 0.05% in each tail of the distribution in order to remove extreme values. I use a non-parametric median test to test the difference in the characteristics of targets among three different groups. Panel A compares the characteristics of targets in group 2 against targets in group 1, whereas Panel B compares those targets in group 2 versus group 0. This table shows the median tests for the RD sample.

Panel A: alternative 2 vs. alternative 0

Alternative j=2 (targets of ND firms)				**Alternative j=0 (non-targets)**			**Median test**		
Variable	**Mean**	**Median**	**Std. dev.**	**Mean**	**Median**	**Std. dev.**	**(2)-(0)**		**Pearson chi2**
roa	-21.060	-5.388	45.766	-33.175	2.717	527.280	-8.105	***	16.079
Rd ratio	0.556	0.012	2.306	1.353	0.021	26.278	-0.009		0.040
hightech	0.500	0.500	0.502	0.504	1.000	0.500	-0.500		0.594
gearing	64.147	34.967	198.146	52.692	19.111	652.821	15.855		2.573
mtbv	3.104	1.655	10.219	1.961	1.350	85.063	0.305		1.015
growth	28.710	5.152	68.964	21.912	6.837	91.576	-1.685		0.362
cash ratio	0.210	0.123	0.218	0.216	0.141	0.218	-0.018		0.161
size	5.118	4.723	2.472	4.942	5.038	2.526	-0.315	**	4.020

Panel B: alternative 2 vs. alternative 1

Alternative j=2 (targets of ND firms)				**Alternative j=1 (targets of DV firms)**			**(2)-(1)**		**Pearson chi2**
Variable	**Mean**	**Median**	**Std. dev.**	**Mean**	**Median**	**Std. dev.**			
roa	-21.060	-5.388	45.766	-10.230	3.379	220.189	-8.767	***	12.748
Rd ratio	0.556	0.012	2.306	0.399	0.015	6.198	-0.003		0.983
hightech	0.500	0.500	0.502	0.461	0.000	0.499	0.500		n.a.
gearing	64.147	34.967	198.146	69.416	27.511	874.627	7.456	**	3.937
mtbv	3.104	1.655	10.219	1.421	1.250	61.950	0.405		0.630
growth	28.710	5.152	68.964	16.744	6.378	70.115	-1.227		0.983
cash ratio	0.210	0.123	0.218	0.195	0.125	0.199	-0.002		0.354
size	5.118	4.723	2.472	5.707	5.595	2.198	-0.872		0.983

Table 2.7: Comparison of pre-acquisition characteristics in TFP sample

Note: This table compares the characteristics pre-acquisition of three groups in the sample (non targets group - 0, targets of non-developed market bidders - group 2, and targets of developed bidders - group 1). All theoretically significant explanatory variables are examined including operating performance (roa), technology level (tfp), hightech target (binary variable), financial leverage (Total debt/Shareholders' equity), growth potential (three year sales growth), market valuation (market-to-book), cash holding (cash/total assets), and size (log of total assets). These variables are winsorized 0.05% in each tail of distribution in order to remove extreme values. I use a non-parametric median test to test the difference in the characteristics of targets among the three different groups. Panel A compares the characteristics of targets in group 2 against targets in group 1, whereas Panel B compares those targets in group 2 versus group 0. This table shows the median tests for the TFP sample

Panel A: alternative 2 vs. alternative 0

Alternative j=2 (targets of ND firms)				**Alternative j=0 (non-targets)**			**Median test**		
Variable	**Mean**	**Median**	**Std. dev.**	**Mean**	**Median**	**Std. dev.**	**(2)-(0)**		**Pearson chi2**
roa	-14.359	1.905	45.168	0.536	4.499	21.360	-2.594	**	5.459
tfp	2.403	1.230	3.682	2.747	2.065	2.881	-0.835	***	15.182
hightech	0.337	0.000	0.476	0.607	1.000	0.489	-1.000		n.a
gearing	81.894	43.158	171.700	78.029	41.854	653.887	1.304		0.114
mtbv	2.388	1.831	5.950	2.869	1.604	21.816	0.227		0.314
growth	15.842	6.079	35.084	15.530	6.185	72.719	-0.106		0.012
cash ratio	0.149	0.094	0.173	0.148	0.089	0.163	0.005		0.314
size	5.460	4.951	2.443	6.167	6.017	2.132	-1.066	**	5.459

Table 7 Panel B: alternative 2 vs. alternative 1

Alternative j=2 (targets of ND firms)				**Alternative j=1 (targets of DV firms)**			**(2)-(1)**		**Pearson chi2**
Variable	**Mean**	**Median**	**Std. dev.**	**Mean**	**Median**	**Std. dev.**			
roa	-14.359	1.905	45.168	-3.195	4.450	53.431	-2.545	**	5.333
tfp	2.403	1.230	3.682	2.445	1.750	2.898	-0.520	***	10.171
hightech	0.337	0.000	0.476	0.506	1.000	0.500	-1.000		n.a.
gearing	81.894	43.158	171.700	59.749	31.475	630.589	11.683	***	7.558
mtbv	2.388	1.831	5.950	2.625	1.740	46.991	0.091		0.013
growth	15.842	6.079	35.084	16.585	6.774	68.973	-0.696		0.302
cash ratio	0.149	0.094	0.173	0.163	0.102	0.177	-0.008		0.593
size	5.460	4.951	2.443	5.415	5.365	2.233	-0.414		0.593

2.5. Empirical results and discussion

2.5.1. Robustness checks

We perform 4 multinomial logistic regressions on an RD sample and a TFP sample. Model 1 and model 2 control for year and industry fixed effects, while models 3 and 4 control for year and country fixed effects. Model 2 and model 4 further examine the effects of the *hightech* variable. As discussed in the previous section, we in turn control for industry and country fixed effects rather than controlling both effects in the same specifications since introducing a large number of dummies into the equation can reduce the degree of freedom and therefore the power of the statistical tests.

We check the multicollinearity issues with VIF statistics. As all VIF indices are significantly less than 10, multicollinearity causes no concern in all settings. Secondly, we used Hausman tests to ensure that the introduction of additional alternative (j) does not change the pairwise odds of other alternatives (i.e. checking if the IIA assumption is violated or not). It is noteworthy that the chi square statistics of all Hausman tests are negative on several occasions, meaning that the asymptotic assumption of the Hausman tests is not satisfied in the fitted models. However, this is not an unusual outcome for the Hausman test, especially when the data is highly imbalanced and the number of observations in group 2 is relatively small (STATA 11-Manual). This statistical outcome can be interpreted as strong evidence in favor of the H-null hypothesis that the difference in two sets of coefficients is not systematic (i.e. IIA is not violated). Additionally, a SUEST test can be used in the case of a violation of asymptotic

assumption, but a relatively small number of observations in the basement group (where alternative j=2) disallows us from performing this test.

2.5.2. Results and discussion

Table 2.8 and Table 2.9 summarize the multinomial logistic regression estimates of the determinants of acquisition probability (equation (1)). More specifically, determinants of pairwise relative odds of acquisition among three groups are examined in four model specifications and across the RD sample (Table 2.8) and TFP sample (Table 2.9). In each model specification we estimate two sets of coefficients. One set shows the differences in characteristics between non-targets and ND targets and the other illustrates the differences between DV targets and ND targets.

We start by estimating an RD sample. Four specifications are used to essentially detect the differences in size and intangibles among three alternative groups of targets. Models 2 and 4 include the high-tech variable. The results in Table 2.8 show that rd ratio and its derivative high-tech variables are not significant. This finding fails to support our hypothesis that firms with a large stock of intangible assets or with intangible assets below a threshold level attract bidders from non-developed markets. However, we find strong supporting evidence regarding target size. ND targets are significantly smaller than non-targets and DV targets. The significant evidence is consistent across all specifications except for model 4 (have the same sign of coefficient but not significant). This evidence lends support to our hypothesis that acquirers aim at small targets to easily and quickly gain access to resources in developed countries.

We carry on with the estimation of the TFP sample. We also test with four model specifications, two of which include high-tech variables in order to examine the threshold level of intangible assets that acquirers do not want to breach. The results presented in Table 2.9 show that targets with a stock of intangibles lower than the industry median are more likely to be acquired by firms in non-developed markets. This finding is strongly significant and is consistent in both model 2 and model 4. In addition, the result shows the same findings with the estimation on the RD sample in terms of size. The results of all specifications but model 4 show that the ND targets are significantly smaller than the DV targets and non-targets. We also find significant evidence at a 90% confidence interval that ND targets have more intangible assets than DV targets and non-targets in model 4 (where we control for country fixed effects instead of industry fixed effects). This is mild evidence since other specifications do not yield significant estimates.

Therefore the strong evidence about target size across two sampling situations and four model specifications suggests that acquirers in non-developed markets aim at small firms in developed countries. This finding lends support to our argument that acquiring small targets is easier, whilst it also enables acquirers to quickly gain control of the targets intangible assets and quickly expose themselves and learn new capabilities in advanced markets. Furthermore, we find that acquirers in non-developed markets are not very interested in high-class technology since the intangible assets are insignificant in most cases. We even find evidence in the TFP sample that acquirers in non-developed markets are more likely to acquire targets with a technology level below the industry

median. More specifically, model 2 and model 4 shows that the relative risk ratios between non-acquired firms and ones acquired by acquirers from non-developed markets are 2.218 and 2.242 respectively. These numbers mean that the high-tech firms have greater odds of *not* being acquired by non-developed acquirers. Similarly, model 2 and model 4 also reports the relative risk ratios between DV targets and ND targets (2.502, 2.228 respectively). These numbers demonstrate that the high-tech firms have greater odds of being acquired by developed acquirers than by non-developed acquirers. Thus, model 2 and 4 provide evidence supporting a notion that high-tech firms in developed countries are less likely to be ND targets. This finding supports our argument that the limited absorptive capacity of acquirers in non-developed markets can only facilitate the transfer of lower-class technology from developed markets.

Therefore, our two main findings support the strategic market entry motive of the acquirers. Acquiring an appropriate target in terms of size and technology level allows them to gather experience in an advanced business environment, quickly gain access to new technology and gradually build up their capabilities. This motivation is in contrast with that of the developed-market acquirers who often seek outright improvement in operating efficiency (Gubbi et al., 2010; Zhu et al., 2011, Thompson, 1997).

Table 2.8: Multinomial logistic relative risk ratios for RD sample

Note: j=0 vs. j=2 Comparison of characteristics between non-targets and ND targets. j=1 vs. j=2: comparison of characteristics between DV targets and ND targets. VIF statistics are less than 10, meaning no multicollinearity issue. Model 1 and model 2 controls for year and industry fixed effects, while model 3 and model 4 controls for year and country fixed effects. Model 2 and model 4 further examines effects of the dummy hightech variable on the relative risk ratio. Hausman tests find no evidence of IIA violation in all cases.

Model 1					**Model 2**					**Model 3**					**Model 4**				
	j=0 vs. j=2		**j=1 vs. j=2**			**j=0 vs. j=2**		**j=1 vs. j=2**			**j=0 vs. j=2**		**j=1 vs. j=2**			**j=0 vs. j=2**		**j=1 vs. j=2**	
roa	0.999		0.999		roa	0.999		0.999		roa	1.000		1.000		roa	1.000		1.000	
	(-1.067)		(-0.835)			(-1.005)		(-0.801)			(-0.162)		(-0.118)			(-0.163)		(-0.128)	
rd ratio	1.003		0.999		rd ratio	1.003		0.999		rd ratio	1.005		1.000		rd ratio	1.005		1.000	
	(0.234)		(-0.070)			(0.209)		(-0.094)			(0.293)		(-0.006)			(0.294)		(0.015)	
gearing	1.000		1.000		gearing	1.000		1.000		gearing	1.000		1.000		gearing	1.000		1.000	
	(-0.079)		(0.022)			(-0.077)		(0.011)			(-0.199)		(-0.055)			(-0.197)		(-0.063)	
mtbv	1.000		1.000		mtbv	1.000		1.000		mtbv	1.000		1.000		mtbv	1.000		1.000	
	(-0.025)		(-0.132)			(-0.061)		(-0.138)			(-0.025)		(-0.116)			(-0.025)		(-0.099)	
growth	1.000		0.999		growth	1.000		0.999		growth	1.000		0.999		growth	1.000		0.999	
	(0.330)		(-0.725)			(0.372)		(-0.689)			(-0.250)		(-1.024)			(-0.252)		(-1.032)	
cash ratio	1.838		1.531		cash ratio	1.516		1.495		cash ratio	1.213		1.419		cash ratio	1.207		1.556	
	(1.241)		(0.857)			(0.819)		(0.782)			(0.403)		(0.722)			(0.372)		(0.864)	
size	1.203	***	1.283	***	size	1.196	***	1.280	***	size	1.011		1.151	***	size	1.011		1.152	***
	(5.585)		(7.440)			(5.294)		(7.222)			(0.268)		(3.465)			(0.269)		(3.492)	
					hightech	1.297		1.059							hightech	1.006		0.894	
						(1.321)		(0.289)								(0.027)		(-0.530)	

Table 2-8 continue

Model 1		**Model 2**		**Model 3**		**Model 4**	
N	31194	N	31194	N	31197	N	31197
VIF min	1.01	VIF min	1.01	VIF min	1.01	VIF min	1.01
VIF max	1.1	VIF max	1.12	VIF max	1.1	VIF max	1.12
Year dummies	Yes	Yes		Year dummies	Yes	Yes	
Industry dummies	Yes	Yes		Industry dummies	No	No	
Country dummies	No	No		Country dummies	Yes	Yes	
Hauman test	IIA not violated	IIA not violated		Hauman test	IIA not violated	IIA not violated	

* p<0.1, ** p<0.05, *** p<0.01

Table 2.9: Multinomial logistic relative risk ratios for TFP sample

Note: j=0 vs. j=2 Comparison of characteristics between non-targets and ND targets. j=1 vs. j=2: comparison of characteristics between DV targets and ND targets. VIF statistics are less than 10, meaning no multicollinearity issue. Model 1 and model 2 controls for year and industry fixed effects, while model 3 and model 4 controls for year and country fixed effects. Model 2 and model 4 further examines effects of the dummy hightech variable on the relative risk ratio. Hausman tests find no evidence of IIA violation in all cases.

Model 1			**Model 2**			**Model 3**			**Model 4**		
	j=0 vs. j=2	**j=1 vs. j=2**		**j=0 vs. j=2**	**j=1 vs. j=2**		**j=0 vs. j=2**	**j=1 vs. j=2**		**j=0 vs. j=2**	**j=1 vs. j=2**
roa	1.001	1.001	roa	1.001	1.001	roa	1.001	1.001	roa	1.001	1.001
	(0.889)	(0.710)		(1.005)	(0.786)		(1.520)	(1.250)		(1.638)	(1.309)
tfpva	0.999	0.999	tfpva	0.967	0.963	tfpva	0.979	0.984	tfpva	0.952 *	0.953 *
	(-0.028)	(-0.014)		(-1.176)	(-1.306)		(-0.573)	(-0.430)		(-1.721)	(-1.668)
gearing	1.000	1.000	gearing	1.000	1.000	gearing	1.000	1.000	gearing	1.000	1.000
	(-0.365)	(-0.346)		(-0.331)	(-0.306)		(-0.316)	(-0.351)		(-0.288)	(-0.312)
mtbv	1.000	1.000	mtbv	1.000	1.000	mtbv	1.000	1.001	mtbv	1.000	1.001
	(0.124)	(0.211)		(0.153)	(0.230)		(0.145)	(0.292)		(0.154)	(0.291)
growth	1.002	1.001	growth	1.002	1.002	growth	1.001	1.001	growth	1.001	1.001
	(0.739)	(0.581)		(0.798)	(0.640)		(0.482)	(0.356)		(0.457)	(0.323)
cash ratio	3.051	2.188	cash ratio	2.914	2.060	cash ratio	1.735	1.510	cash ratio	1.615	1.381
	(1.592)	(1.103)		(1.532)	(1.022)		(0.806)	(0.595)		(0.704)	(0.468)
size	1.148 ***	1.281 ***	size	1.074	1.185 ***	size	1.101 *	1.224 ***	size	1.023	1.124 **
	(3.007)	(5.337)		(1.428)	(3.360)		(1.833)	(3.808)		(0.405)	(2.015)
			hightech	2.218 ***	2.502 ***				hightech	2.242 ***	2.558 ***
				(2.840)	(3.232)					(2.875)	(3.306)

Table 2-9 continues

Model 1		**Model 2**		**Model 3**		**Model 4**	
N	23614	N	23614	N	23699	N	23699
VIF min	1.01	VIF min	1.01	VIF min	1.01	VIF min	1.01
VIF max	1.37	VIF max	1.52	VIF max	1.37	VIF max	1.52
Year dummies	Yes	Yes		Year dummies	Yes	Yes	
Industry dummies	Yes	Yes		Industry dummies	No	No	
Country dummies	No	No		Country dummies	Yes	Yes	
Hauman test	IIA not violated	IIA not violated		Hauman test	IIA not violated	IIA not violated	

* p<0.1, ** p<0.05, *** p<0.01

2.5.3. Limitations

The main concern of this study is that the results fail to indicate strong evidence of SME, perhaps due to the aggregate level of investigation in which multiple countries of both acquirers and targets are involved over a wide spectrum of years. Naturally, the follow-up step of this study is to narrow down the perspective and impose constraints on either the country, industry or time dimensions. However, under such restrictions the number of observations, especially the number of M&A events from non-developed market bidders, declines dramatically, thereby making it impossible to perform further analysis.

It is noted that given the context of the following empirical chapters where we consider acquirers from emerging countries, it would be preferable if this study uses the same group of acquirers countries. However, the number of observations would have been very limited due to the fact that markets for corporate control in emerging countries are still in the early stage of development. Therefore, the acquirer country group is extended to include observations in other developing nations.

2.6. Conclusion

Over the last two decades, we have witnessed a growing trend of acquisition FDI from non-developed to developed markets. Acquiring firms in the former markets have different characteristics and competitive advantages to their counterparts in the latter (Bhaumik et al., 2010; Guillen and Garcia-Canas, 2009). In this paper we conduct an empirical examination of the characteristics of target firms in developed markets. Our purpose is to find the evidence that indicates the dominant motive of the acquirers in less developed countries.

Using a large sample of more than 23,000 targets located across 20 developed countries, we find evidence supporting the strategic market entry motive whilst finding no evidence that is linked to the widely documented market for corporate control hypothesis.

From the findings of this investigation, a message that emerges is that the primary motive of the acquirer is not necessarily the same in non-developed markets as in developed ones. Acquirers in the US or UK for example are often endowed with advanced technology, management quality and high corporate governance standards, while companies in less developed countries are often characterized by the lack of key resources and capabilities. The former therefore has the capability to hunt and punish inefficient management, whilst the latter seems to be far away from that stage. As a result they have the motivation to build up their ownership advantages in order to catch up with the established firms in developed countries. They may do so by acquiring a

small firm with a low stock of strategic assets in order to familiarize themselves to the advanced business environment and gradually consolidate their competitive position for the battle in the long run.

Chapter 3: New evidence on M&A wealth effects in emerging countries

3.1. Introduction

Over the last two decades, FDI from emerging to developed markets in the form of cross-border mergers and acquisitions have grown rapidly (WIR, 2006). However, we have known little about the effects of such an event on emerging-market acquirers. Although this issue has been rigorously researched in the literature, the results can hardly be generalized and apply to emerging markets. One of the reasons for this is that even in developed markets the empirical evidence of wealth effects has not reached consensus. Evidence of positive gains in certain circumstances[8] found mixed with evidence of significantly negative and insignificant effects[9]. In addition, firms in these markets are characterized by a different set of ownership advantages (Guillen and Garcia-Canal, 2009) and possibly different value creation mechanisms (Gubbi et al., 2010; Rui and Yip, 2008; Hitt et al., 2005). They also run their main business in environments governed by different sets of rules. Bhagat et al. (2011) and Kim (2000) document that firms in these countries have different "*international experience and exposure, corporate governance, cultural background, government regulation and maturity of the domestic capital markets*". Therefore, new evidence generated from this study may enhance understandings of average effects of M&A decisions on the

[8] *Moeller et al., 2005; Kang, 2000; Asquith, 1983; Eckbo, 1983*
[9] *Ruback, 1988; Malatesta, 1983; Mandelker, 1974*

future performance of acquiring firms and could therefore be potentially useful for managers in emerging markets.

We also make a contribution by addressing the drawbacks in previous methods. Results from previous studies using a market model may systematically suffer from a fundamental problem that the pure effects of acquisitions cannot be isolated (Jensen and Ruback, 1983). The later traditional matching method (Baber and Lyon, 1997; Loughran and Ritter, 1995; Spiess et al., 1995) can only control for selections on a small number of characteristics. To address this issue, we use a long event window with a combination of propensity score matching model (PSM) and the difference-in-differences technique (DIDs) in this investigation. The major advantage of this method lies in its capability of dealing with selection bias on observable and unobservable characteristics (Girma et al., 2006; Blundell and Costa Dias, 2000).

This method is used upon a relatively large sample consisting of data in 17 emerging countries and targets in 20 developed economies over the period of 1988-2010. We find acquisitions into developed countries generally fail to add value to the emerging-market acquirers. More specifically on average the acquirer underperforms after three, four and five years starting from the M&A completion date. Further analysis which takes into account the presumably influential factors (i.e. previous M&A experience, cash payment, transfer of control rights and industry relatedness) confirm the strong and negative impacts of merger events on the acquirer long term performance. The

significant negative evidence is consistent with the results of the majority of studies in developed markets[10].

The rest of this paper is organized as follows. The next section reviews relevant theories and presents our hypotheses, then the following section describes the methodology and data for this examination. The empirical results are then presented and discussed. The final section summarizes this essay.

3.2. Theoretical framework

In this essay, we address two major gaps in the literature. First, there is a shortfall of studies that investigate wealth effects concerning acquirers from emerging markets. In particular, we know very little when they acquire firms in developed markets. Secondly, we address the drawbacks of the traditional methods used to estimate the wealth effects. Our methodological analysis shows that such drawbacks embed a high level of potential selection bias which casts serious doubt on the final results of previous studies.

3.2.1. Wealth effects of M&A in emerging markets

In a recent survey, Martynova and Reeneboog (2009) document enormous volume of study over more than 100-year history of mergers and acquisitions activities[11]. In five

[10] *Malatesta (1983) and Magenheim and Mueller (1988) use the market model and find significant evidence of negative average abnormal returns. Agrawal et al. (1992) use matching on firm size and find significant negative effects of M&A. Conn et al. (2005) and Ang and Cheng (2006) use matching on size and book-to-market and find significant evidence of negative effects. Croci (2007) find significant negative effects of M&A in France, Germany, Italy, Switzerland and UK.*

waves of mergers (according to their division of the timeline) there are a number of studies examining the effects of mergers and acquisitions on acquirer performance. However, we do not find a single one that looks into this issue in emerging markets. In fact, the literature involving wealth effects from an emerging-country perspective is rather scant. We document only a small number of studies published in major academic journals (e.g. Kale, 2004; Chari et al., 2010; Yiu et al., 2007; Young et al., 2008). The lack of interest in emerging markets may be attributed to the inadequacy or unavailability of empirical data.

3.1.1.1. Distinctive characteristics of emerging-market acquirers

An investigation about wealth effects in emerging countries may yield different results from the effects documented in the US, UK and European markets due to potential differences in the motive of acquisition and competitive advantages.

As shown in the previous chapter, the motivation of emerging-market acquirers is different from that of developed-market counterparts. While the latter seeks to replace inefficient management teams (Caves, 1989; Thompson, 1997; Zhu et al., 2011), the former appears motivated by quick access to quality resources and gathering new experience in developed countries (Guillen and Garcia-Canas, 2009; Grimpe and Hussinger, 2009; Gattai et al., 2010; Antkiewicz and Whalley, 2006, p.7; Deng, 2004). Such difference in motive is likely to cause a discrepancy in wealth effects. Indeed, Kim (2000) finds that when Korean firms are motivated by using their ownership advantages

[11] *Back from the mid 1890s (Martynova and Renneboog, 2009, p.2149).*

on less developed countries, the resulting abnormal return is significantly positive. Kim also found that when Korean firms engage in acquisitions in advanced markets with different motives the optimistic reactions disappear, leading to negative and insignificant abnormal returns.

Acquirers in emerging countries also have a different set of competitive advantages and disadvantages, compared to acquirers from developed nations. The latter can rely on their own technology, management expertise and brand equity in international expansion (Dunning 2000, 2008). Meanwhile, the former have advantages over basic inputs, political capability[12] and the ability to gather a large army of labour in short amount of time (Guillen and Garcia-Canas, 2009). Guillen and his colleague argue that one feature of emerging-market acquirers is the lack of resources and capabilities of firms in advanced economies. Therefore, the access to key resources in the western world such as technology, marketing skills, and capital market may enhance competitive power over local firms in emerging countries. In addition, the well-known family ownership of emerging-country firms constrains their main focus on local markets (Bhaumik et al., 2010). Indeed, we argued in the previous chapter that foreign expansion in any form may take only a small part of their business due to the principal-principal agency problems. Therefore, access to key resources in developed countries would grant emerging-market firms distinctive advantages in their main markets.

[12] *Guillen and Garcia-Canas, 2009 defines this as the ability to adapt quickly in variety of business environments.*

3.1.1.2. Agency problems of emerging-market acquirers

According to agency theory, the agency problem arises upon the divorce of management and ownership and the lack of stringent corporate governance practice. As a result, managers have the motivation to maximize their own utility at the expense of shareholders (Jensen and Meckling, 1986). The mangers' benefits are associated with the firm size, as size rather than profitability is more likely to determine executive remuneration (Maris, 1964). Large firm size is also a symbol of power in the market (Jensen, 1986). Therefore, the managers may wish to improve the firm size, and acquisition is probably the quickest way to do this when compared to green-field investments or organic growth. The focus on improving a firms size would harm the shareholders' value since managers are willing to overpay or engage in acquisitions with high risks of negative net present value (NPV).

In emerging economies, agency problem is more severe. In fact, as the story of the Asian financial crisis unfolded in 1997, non-value maximization corporate behaviour is the most frequently cited cause for the crisis (Gibson, 2003). The concentrated ownership structure in these markets might be the main cause of this problem. In countries like China, the state often holds the majority of share in large bidding firms and the top CEOs of these corporations are assigned by government agencies (Guillen and Garcia-Canal, 2009). As a result, the CEOs are protected from market principles that force them to maximize the value for the shareholders. They also enjoy political connections with the government agencies, who offer them profitable investment opportunities on the

"win-win" principles (Kim, 2000). Such a bureaucratic mechanism is a basis of serious moral hazards for the public investors and lenders (Radelet and Sachs, 1998). When the implicit arrangement between CEOs and State agencies is the ground of foreign expansion, the agency problem may be even more ample for the stockholders of acquirers in emerging economies. Furthermore, other studies argue that the stock ownership of firms in emerging countries is not well diffused (Kim, 2000), and most firms have ownerships concentrated with a small number of family members (Bhaumik et al., 2010). This is the root of corporate governance issues, since the family tends to do a bad job in enforcing the legal rights of minority shareholders. La Porta et al., (2000) argue that in a business environment characterized by unenforced codes of supervision and governance practice the founding family can extract private benefits at the expense of minority shareholders.

Finally, when targets are located in advanced economies, emerging-markets managers may be motivated by the wealth fare of target countries such as immigration, healthcare and education for future generations (Deng, 2004). Such motivation can only bring harm to the shareholders' value.

In brief, the ownership structure of emerging-market firms is the cause of a conflict of interest between shareholders and managers and between the state owner/founding family and minority shareholders. This undoubtedly has negative impacts on the subsequent performance of the bidders after the acquisitions.

3.1.1.3. Hubris problems in emerging markets

There are two versions of hubris behaviour documented in the literature (extreme and moderate), both of which commonly drive up merger premiums, thereby causing negative impacts on the wealth of the acquirers shareholders. The reason for overpaying for the target firm is that the bidders managers overestimate their ability to materialize expected synergies or underestimate the costs involved in the integration process (Roll, 1986; Mock, Shleifer and Vishy, 1990). In the extreme version of hubris behaviour, it is often assumed that no gain is achieved through acquisitions and the wealth improvement of the targets shareholders is entirely equal to a takeover premium transferred from the acquirer. The extreme version is consistent with strong-form market efficiency, in that financial markets are efficient and no form of reorganization or no better alternative or talented management team are able to produce excessive gains or reduce current costs (Roll, 1986; Seth et al., 2000). The underlying assumption of the extreme version is the irrational behaviour of managers, because rational managers know any bid with premium over market price is erroneous. Therefore, given the core assumption of a strong-form market efficiency in the extreme version M&A should destroy value on average, and the difference in the magnitude of value destruction between developed and emerging market groups should be attributed to the difference in the level of the manager's irrationality.

The moderate version of hubris behaviour, on the other hand, assumes stock price movement does not exhibit a strong form of market efficiency, which therefore makes it

more suitable for the context of emerging markets. In this version, the valuation of target firms might still be erroneous with a high risk of overpay, because the distribution of the stock price of the target firm is often truncated on the left tail due to the fact that the stock price tends to run up prior to the announcement (Seth et al, 2000). As a result, managers only observe the right tail of the genuine distribution and risk overpaying the targets shareholders. Like bidders in developed economies, there is not much that those in emerging markets can do to deal with the distorted distribution of a targets stock price. However, in less efficient markets the value of insider information might be worth more than the same information in efficient markets because the acquirers in emerging markets are probably not required to disclose as much information as their counterparts do in developed countries. When a large volume of information about M&A transactions is hidden from the public the risks of hubris increases, thus making the subsequent impacts on wealth less predictable. Therefore the difference in the level of market efficiency and the scale of the overestimation of problems and the lack of knowledge about the distribution of a targets share price make the impact of hubris behaviour in emerging countries rather unpredictable, even when we have certain knowledge about the hubris behaviour of managers in the developed world.

In summary, it is difficult to speculate about the impact of acquisitions on the acquirers performance in this context. The potential synergies created from a combination of the existing assets and key capabilities of the acquired firms can be offset by severe agency and hubris problems in emerging markets.

3.2.2. Traditional factors influencing wealth effects

3.2.2.1. Relatedness

Relatedness refers to whether an acquirer and target are in the same line of industry. In related acquisition, the acquirer and target are in the same line of industry, whilst in an unrelated or conglomerate acquisition they are not.

Acquiring related firms can create operational synergies such as economies of scale and economies of scope by cutting out duplicate segments and excess capacities in the combined firms. It may also enhance the acquirers market power if the target is one of its competitors. Moreover, having knowledge of the targets industry may increase the absorptive capacity, which is especially important when the target seizes advanced technological assets. Since the technology gap between emerging and advanced economies is substantial, acquiring firms with a relevant portfolio of assets may lead to efficiency advantages which are unavailable to bidders with an irrelevant portfolio. Indeed, existing empirical evidence in developed markets is in favour of related over conglomerate acquisitions with regard to value creation (Datta et al., 1992; Markides and Ittner, 1994; Singh and Montgomery, 1987; and Conn et al., 2005). Therefore, one of the central predictions of these literatures is that related acquisition should outperform unrelated or conglomerate diversification (Klein and Lien, 2009).

The problems of unrelated acquisition have been associated with the rent-seeking behaviour of divisional managers (Sharfstein and Stein, 2000), bargaining problems

within the firm (Rajan et al., 2000) or bureaucratic rigidity (Shin and Stulz, 1998). For instance, Scharfstein and Stein (2000) argue that CEOs have the potential to allocate capital budget in the "socialism" manner, whereby stronger divisions end up subsidizing weaker divisions. In addition, influence cost models posit that managers of the underperforming division have an incentive to bribe and persuade top management to channel resources to their division. It is certainly value destruction on an overall level if such an attempt is successful. And even if such an attempt fails as the top management sees through the manager's motivation, such a division has to incur substantial lobbying costs. Secondly, managers of conglomerate bidders might have more resources at their discretion because diversification helps to reduce the bankruptcy risks, thus allowing the managers to borrow from financial institutions at lower interest rates[13]. Under such circumstances, conventional agency theory predicts that the managers can overinvest the resources (Matsusaka and Nanda, 1997; Stulz, 1990). Furthermore, Rajan et al. (2000) hypothesize that diversification is costly to the firm. They conclude that *"the introduction of a new subunit in a hierarchy can have ramifications for other subunits because it alters the power structure in the hierarchy and affects the decision making process".* Therefore, these managerial problems in unrelated diversification hinder the optimization of investment resources in both the long and short term (Klein and Lien, 2009).

The notion that conglomerate diversification causes sub-optimal resource allocation is supported by a series of empirical studies in the corporate finance literature. In the

[13] *Berger and Ofek (1995) find that in practice the effect of diversification on extra-borrowing capacity is trivial.*

1980s and early 1990s, diversified firms often traded at a discount compared to the portfolio of specialized firms (Lang and Stulz, 1994; Sevaes, 1996; Lins and Sevaes, 1999). Additionally, the stock markets react positively when the firm announces a plan to refocus (Bhagat et al., 1990 and Comment and Jarrell, 1995).

However, such a notion fails to explain the persisting existence of conglomerate acquisitions (Klein and Lien, 2009). Even in developing countries like India and Korea, conglomerates play a more important part in the market for corporate control (Khanna and Palepu, 1999, 2000). The alternative explanation is drawn upon the internal capital market hypothesis. In an early study, Williamson (1975) theorizes that the organization of diversified firms can be viewed as an alternative capital market, whereby conglomerate resources are distributed internally by the order of the head quarter. Williamson argues that the internal capital market is more efficient than the traditional external market for a number of reasons. For instance, top managers in the head quarter have better information about their organization than the external market as divisional managers are more willing to reveal important information internally than to outside investors. They only take into account their own expectation in resource allocation and do not need to worry about speculations in the market (Klein and Lien, 2009).

The internal market hypothesis is also supported by a number of empirical studies. These studies find that the evidence regarding the discount trading of diversified firms in earlier studies is subject to selection bias. Diversification and undervalued firms might

not have a causal relationship. It is possible that the link between diversification and undervalued firms is driven by the same underlying factors. When these factors are controlled for, the discount disappears (Campa and Kedia, 2002; Graham et al., 2002; Chevalier, 2004; Villalonga, 2004).

In emerging markets, the internal capital market mechanism appears more efficient than the external market since the latter is subject to a series of institutional impediments. As a result, a diversification strategy may add value to the acquirer. This notion is supported by the prevalence of conglomerates in emerging economies (Khanna and Palepu, 1999, 2000). The popularity of unrelated acquisitions in emerging markets may have an alternative explanation. According to Kale (2004), the market for corporate control in countries like India is still in its infant stage, where acquirers have a limited choice of viable targets. Therefore, unrelated acquisition is more likely to occur. Nonetheless, conglomerate bidders are still capable of enhancing firm value by being pioneers in the liberalization process of the capital market. The benefits of "*low hanging fruits*" for the pioneer may outweigh problems associated with unrelated acquisitions (Kale, 2004).

Briefly, relatedness is a potential determinant of wealth effects, and the empirical evidence in emerging countries leans toward the value enhancement of unrelated acquisitions.

3.2.2.2. Method of payment: Cash vs. Non-cash

The impact of payment method has been documented in a series of papers (e.g. Loughran and Vijh, 1997; Rau and Vermaelen, 1998; Mitchell and Stafford, 2000). A common perception on this respect is that cash-financed acquisitions generally have positive impacts on the acquirers performance in both the long and short run, whilst stock-finance acquisitions often result in negative impacts (Loughran and Vijh, 1997).

Market inefficiency has been argued as the underlying driver of both payment method and its impacts on an acquirers performance. Indeed, if the stock market is truly efficient, the mode of payment in acquisitions of either cash or equity should not have any effect on the bidder performance (Sudarsanam and Mahate, 2003). However, Longran and Vijh (1997) suggest that the market is not efficient and does systematically overestimate or underestimate synergy gains from acquisitions. One of the main causes of an inefficient market, according to Mitchell and Stafford (2000), is that the bidders management generally has access to private information that is unavailable to the target or to the public. As a result, in such a world of asymmetric information where managers have information that other shareholders do not, firms will issue stock only when it is overvalued and prefer to settle with cash when their stock is undervalued (Myers and Majluf 1984), and if the market fails to react properly to the message embedded in the method of payment then the potential overvaluation or undervaluation is likely to show up as an abnormal return a few years after the acquisition Longran and Vijh (1997). Therefore, the method of payment signals

information about the stand-alone value of the acquiring firm, and the market reaction towards such information is likely to result in a long term abnormal return.

In emerging countries the impact of payment method could be stronger since the weak institutional framework in these countries allows managers to hide a significant volume of information from the public. When information about the payment method is disclosed the market adjustment for such information about the true value of the firm may cause substantial movement in the stock price, and as a result yield a remarkably abnormal return.

3.2.2.3. Acquiring minority stake vs. acquiring for control right

Acquisition for corporate control is an important influential factor of wealth effects. Controlling majority of the target ownership means having control over the tangible and intangible assets of the combined firm. In the minority stake control, the target firm is unlikely to share their intangible assets such as letting the acquiring firm use their brand name or sharing patents and know-how due to an incomplete contract problem (Grossman and Hart, 1986). According to Grossman and Hart's contractual incompleteness argument, an acquirer might be harmed by the "*opportunistic and distortionary behavior"* of a target firms management if they do not acquire the residual rights of control (i.e. majority control). Seizing the residual rights of control allows the target firm to obtain a large share of surplus created from the integration (Grossman and Hart, 1986, p.716). As a result, gaining majority control in M&A may induce positive effects on *ex-post* integration surplus for the bidder.

Indeed, in an examination of the wealth effects of developed market firms in acquisitions of emerging markets targets, Chari et al., (2008) found that acquisition of control is a key factor which creates positive abnormal returns for acquirers. They document a significant increase (almost triple) in acquirer returns in acquisition of control, while acquisitions of minority stakes fail to yield significant returns. Chari and his colleagues adopt Grossman and Hart's argument and hypothesize that taking control of target firms may eliminate the problems of incomplete contracts which commonly plague transactions in emerging markets. The synergies are perhaps materialized because acquirers in developed countries are willing to share valuable assets with target firms when they hold residual rights of control. In the absence of this condition, acquirers are unlikely to share such assets, especially in business settings characterized by weak property rights protection and a lack of monitoring (Holmstrom and Tirole, 1997).

In the context of this study, where acquirers are based in weak institutionalized emerging markets, target firms in developed countries are even more unlikely to share their valuable properties as long as the residual rights of control are still in their hands. As a result, if driven by strategic assets from advanced economies bidders might need to raise a premium in the takeover bid in order to gain control of residual rights. They may also need to pay a premium to deal with the "free rider" problem since the targets shareholders might refrain from selling stocks to the bidder and wait for the price rally after the announcement date. With the anticipation of a price increase after the merger announcement, a targets shareholders might keep holding out their stock for a better

price in the future. Therefore an acquirer in acquisition for control may need to pay a high premium to deal with “incomplete contract” and “free rider” problems.

Nonetheless, managers in emerging countries may be willing to pay a handsome premium for control rights as with the control rights the managers are entitled to exclusively private benefits that minority investors do not have (Dyck and Zingales, 2004, p. 7). Dyck and Zingales find that value of corporate control accounts for 14 % of firm equity on average, ranging from -4% in Japan to +65% in Brazil. The premium paid for control rights is higher in countries with less protection for investors (Dyck and Zingales, 2004, p4). This evidence suggests that managers in emerging countries are willing to pay more for control rights. However, what they receive from private benefits of control in developed countries may in effect be significantly less than what they expected. The reason for this is that more stringent governance practice and strong institutionalization in developed markets can hinder the exercise of private benefits of control.

Following these lines of argument we argue that when a bidders management increases the bid premium to gain majority control, the subsequent stock performance can be affected in two different ways. On one hand, a significant increase in the bid premium may cause immediate adverse effects on the shareholder’s wealth of the bidder since market investors may interpret such a high premium offer as a result of managerial motives. On the other hand, gaining control allows the bidding firm to access intangible assets of the target firms (e.g. brand name, management expertise and innovative

patent and know-how). Such valuable acquired assets in combination with the ownership advantages of bidders in emerging markets (e.g. local knowledge, cheap labour, available raw materials) might be a formula for a lucrative performance in the long run (Seth et al., 2000: Eun et al., 1996). We therefore expect that majority control acquisitions are likely to cause negative effects on bidders performance in the short run but may result in a better performance in the long run compared to minority stake acquisitions.

3.2.2.4. Previous experience in developed markets

Experiences in acquisition activity may have positive effects on a shareholders' wealth, since knowledge previously acquired in developed countries can help acquirers in cutting transaction and integration costs. Furthermore, experience may also be associated with the endowment of capability to integrate firms of diverse corporate cultures and managerial nationality. Barkema et al. (1996) argue that a firm engaged in a foreign expansion encounters *two layers of acculturation* and needs to accommodate the corporate and national culture of the target firm. According to this study, the expansion also requires the knowledge of foreign sites such as institutional characteristics. Therefore previous knowledge in expansion may reduce the cultural barrier. Barkema and his colleagues conclude that expanding firms may benefit more if they choose to expand in countries where they can exploit previous experience. Given the strong cultural connection among developed countries, we expect a significant

increase in wealth effects when acquirers have previous experience in developed countries.

3.2.2.5. Changes in business environment

Takeovers tend to occur in waves, and the pattern of value creation varies across merger waves (Martynova and Renneboog, 2008). Martynova and Renneboog (2008) show that each wave of mergers is characterized by a different set of features, and these sets are unlikely to be the same in different waves of mergers. Given the significant changes in the market for corporate control through time, the average level of wealth effects may vary accordingly.

Indeed, earlier studies (Jarrell and Bradley, 1980; Schipper and Thompson, 1981) suggest the need to break a merger sample into different periods of time. For example, the 1968 Williams Amendment Act allows US target firms to have 10 more days to evaluate tender offers, which increases the chance that targets receive competitive bids from rival bidders (Jarrell and Bradley, 1980). The additional costs including litigation and delay may force the acquirer to pay a premium for the transaction (Jarrell and Poulsen, 1989). Moreover, Asquith et al. (1983) use pairwise t-statistics to compare two series of acquirers abnormal return in two periods of time. Their significant evidence lends support to the hypothesis that wealth effects in the market for corporate control vary with the time period.

In emerging markets, changes in business environment are more dramatic. Before the 1990s firms in emerging markets operated in closed economies with heavy restrictions on conducting business. Stock markets and markets for corporate control were virtually nonexistent and takeovers were not allowed (Kale, 2004). However, gradual economic liberalization in emerging markets has removed business restrictions over time and created more opportunities for participating firms in the markets (Kale, 2004). Policy changes allow more firms from emerging markets to engage in acquisitions of foreign targets, which then increases the possibility of multiple bidding in any particular acquisition. As a result, emerging market acquirers may have positive gains at the beginning of liberalization due to a lack of competition, but this benefit may deteriorate at a later stage when more firms join in acquisitions activity.

These lines of reasoning suggest the need to control for merger wave in the examination. Breaking the timeline allows us to accommodate changes in government regulations and other time relevant issues of markets for corporate control.

In summary, we argue that acquirers in emerging markets have distinctive characteristics compared with those in developed countries. Their features regarding acquisition motive, competitive advantages, agency and hubris issue among other influential factors to make the average acquisition effects rather unpredictable.

3.2.3. Empirical evidence concerning emerging nations

The wealth effects issue has been well-documented in the literature regarding developed economies. However, only a small number of recent studies have attempted to cast some light on the particular landscape concerning developing markets. For instance, Chari et al. (2004) examine the wealth effects of mergers on acquirers from developed markets when they acquire emerging-market targets. Surprisingly, on average the acquirer gains a significant abnormal return after the acquisitions events. Such evidence of positive (though trivial) abnormal return is rarely found in settings of domestic or cross-border acquisitions among developed countries. They attribute the reported gain to the power of the propensity score matching method used to construct non-event firms. Later, Chari et al (2009) chose a reverse set of acquirers and targets where the acquirers are located in developed countries and the target firms are in emerging countries. Instead of examining the acquirers wealth effects they look into the effects of mergers on the targets shareholders. Once again, they find the performance of the target tends to improve following acquisition. In particular, the return of assets (ROA) increases by 16% on average in the five years following the acquisition.

Furthermore, Kale (2004) examines merger's impact on Indian acquirers and finds positive abnormal returns for acquirers (1.71%) following the acquisition. Kale argues that the value creation pattern in emerging markets might be very different compared to the mechanism typically observed in developed countries. The positive average

abnormal return is a primary result of *"the nature of traditional business environment in these (emerging) markets and its gradual transformation following liberalization*".

In an earlier study, Kim (2000) also used a simply market model to examine the wealth effects of an FDI announcement on Korean bidders. He finds that expanding into more advanced economies does not yield any statistically significant positive abnormal returns, while investing in less developed countries (LDCs) consistently generates positive and significant stock return for the bidder. He argues that the significant gains might be attributed to the ownership advantages of Korean firms over those in less developed countries. Meanwhile, such ownership advantages disappear when they invest in more advanced economies. In addition, the investment decision into advanced economies might be driven by the non-value maximization behavior of Korean firms managers who often benefit from a close connection with government agencies.

In summary, we are aware of only a few studies examining the wealth effects of acquisition events in emerging markets. The inconsistency in their results suggests a significant difference in the sign and magnitude of wealth effects in these countries compared to such effects in developed economies.

3.2.4. Estimation model of abnormal return

This study also addresses problems associated with the calculation of abnormal return in previous studies. First, we use a long run instead of short run abnormal return to proxy for wealth effects. We use a long run window from one to five years to measure

excess return. We are unaware of any model predicting how long the wealth effects may disappear. However, we observe a number of studies that use a one to five years interval. Such a length of time horizon is also used to measure excess return after stock offering events (Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995). Besides, Loughran and Vijh (1997) argue that "the effect of restructuring decisions related to the appointment of new managers, combining the operations of both companies, and pursuing new investment opportunities should take a few years". Moreover, Healy and Palepu (1995) suggest that abnormal return should be measured over the course of at least 16 months. In our examination, acquirers and targets have distinctive organizational structures and are located in countries with great cultural differences. Therefore it may take a long time for the wealth effects to disappear in the performance record of the acquirer.

Secondly, we use a different method to measure the long run abnormal return because methods adopted in a large number of previous studies may be systematically erroneous.

3.2.4.1. Single-index model

The literature is filled with studies examining short-run wealth effects in domestic or cross-border acquisitions[14]. The most common technique used in examining announcement return is using a single-index model as a basis for abnormal return

[14] *Malatesta (1983), Frank and Harris (1989), Kennedy and Limmack (1993) used the market model and found significant and negative wealth effects. Other studies using market adjusted model (Chatterjee, 2000; Bradley and Sundaram, 2004; Sudarsanam and Mahate, 2003) and CAPM (Gregory, 1997; Franks and Harris, 1989) yield inconsistent results about cumulative average abnormal returns (CAARs) in the long run.*

calculation[15]. The underlying assumption of using a single-index model is the existence of an efficient market where merger news is quickly digested and reflected in stock returns. The wealth effects can therefore be captured in a certain number of days around the acquisition announcement.

Despite the extensive application in long-run studies, Agrawal et al. (1992) suggest that these models are only sufficiently robust for short term examinations when the event window is narrow, but not suitable for examinations in longer measurement intervals. Long term investigations require control for other firm-specific factors such as size and change of beta risks (Dimson and Marsh, 1986; Agrawal et al. 1992). Dimson and Marsh (1996) argue that results yielded from a market model are susceptible to bias since there is a lack of explicit control for firm size. They also argue that "*as the measurement interval is extended any bias will be steadily magnified and soon become dominant*"

In addition, using market models or CAPM models to predict benchmark returns has potential methodological problems when the event window is extended to a few years after the announcement (Jensen and Ruback, 1983). Brown and Warner (1980) criticize the market model as the least efficient among event study methods since it introduces significant noise into the result. When the event window is narrow, it is easier to capture the genuine effects on stock performance since the firms risk is unlikely to change significantly in a short period of time. As the window extends to several years the captured abnormal returns might be plagued by various corporate decisions and

[15] *Popular models are the mean adjusted model, market model, market adjusted model, and Fama and the French three-factor model (Sudarsanam, 1996).*

events which occur during the length of the measurement interval (Jensen and Ruback, 2003). Furthermore, underpinning the single-index model is a set of statistical assumptions which are frequently adopted without empirical tests. When the market model is subjected to rigorous econometrics inspection, Coutts et al. (1994) find that *"misspecification is endemic in the market model: typically the residuals from the least square estimation exhibit autocorrelation, heteroskedasticity and non-normality with occasional evidence of non-linearity*". As assumptions do not hold, any inference about the impact of an event on return may be erroneous. Barber and Lyon (1997) also argued that the common methods using the above models to calculate abnormal returns for long run analysis are "*conceptually flawed*" and lead to biased test statistics. In brief, the above studies suggest that a short run model may be suitable to examine the temporary reaction of market investors around an announcement date and not suitable to measure long term excess wealth effects.

3.2.4.2. Traditional matching technique

Considering the problems of single-index models, later studies use a matching approach described in the study of Barber and Lyon (1997). Performance of firm matched upon size and market-to-book ratio is used as a benchmark to estimate excess return. Dimson and Marsh (1996) advocate control for size in event studies as they find that size is an especially important influential factor of stock return. Besides this, Fama and French (1992) find both size and market-to-book ratio is a significant determinant of stock return. Subsequently, various articles follow this route and control for firm size and

market-to-book ratio in the estimation of the long run abnormal return of events such as initial public offerings (Loughran and Ritter, 1995), seasonal offerings (Spiess et al. 1995), and stock splits and dividends (Desai and Jain, 1996. There are three different approaches to control for size and market to book ratio: (1) Fama and French three-factor model[16], (2) reference portfolio[17], and (3) control firm approach[18].

Among these approaches, the control firm approach is more robust for three reasons. First, Barber and Lyon (1997) showed that using the control firm approach to calculate abnormal returns is more robust than the reference portfolio and the three-factor models. The test statistics are better specified when matching sample firms to control firms with a similar size and market to book ratios. Second, if all non-event firms in emerging countries are pooled to form reference portfolios based on size and book-to-market ratio,[19] performance of acquirers in countries with more favourable policies will form a bias towards higher abnormal returns. The opposite happens with the performance of acquirers in countries with less favourable policies, and that performance will generate bias towards lower abnormal returns. As a result, captured abnormal returns are biased because country effects are not isolated. Furthermore, the

[16] *Fama and French Three Factor Model (FFTF): The model is based on CAPM but accommodates Size factor and Book-to-Market factor in the model. Fama and French justified that Beta, Size and Book to Market factors are adequate to explain the observed normal return. The return generated from this model can also be called a dynamic benchmark (Sudarsanam, 2003).*

[17] *Reference Portfolio: The portfolio is constructed by stocks with predefined characters (e.g. size, Book-to-Market, industry). The real return of this portfolio is the dynamic benchmark of the normal return (Sudarsanam, 2003).*

[18] *Within the traditional matching framework, the match firm has the closest values of size and market-to-book ratio to those of the acquirer. In order to find a match, a series of firms in the market are screened so that their market values (size) fall within a range of 70%-130% of an acquirers size. Then a firm that has the closest market-to-book ratio within the size range is chosen as the match. Alternatively, matched firms can also be drawn the other way around, where market-to-book ratio is used for filtering then size is used as a criterion to find out the closest match.*

[19] *All peer firms are pooled then ranked by size and divided into 10 groups. Each group will then be further divided into 5 smaller groups based on book-to-market ratio. Altogether, there will be 50 reference portfolios that can be used to match with sample firms (Agrawal et al., 1992; Barber and Lyon, 1997).*

reference portfolio approach yields listing, rebalancing and skewness biases of test statistics, plus the implementation of this approach is more cumbersome. Thirdly, the control firm approach can mitigate problems related to the CAPM three-factor model (Kothari and Warner, 1996). As a result the control firms approach appears to be the most suitable within the traditional matching frameworks.

However, one major drawback of the control firm approach is that it cannot handle too many matching criteria. Matching upon size and book-to-market involves dealing with two dimensions, and the procedure is manageable. However, matching upon three or more characteristics requires a solution which is able to accommodate three or more dimensions, which the existing procedure of this matching framework cannot resolve efficiently. Guo and Fraser (2009) refer to this as a dimensionality problem, which can be dealt with a propensity score matching framework.

3.2.4.3. Propensity score matching and difference-in-differences

In principle, in order to investigate the impacts of mergers and acquisitions on acquiring firm performance, it is ideal if we can identify an identical firm to the acquirer that does not involve mergers and acquisitions (non-acquirer). While this sort of counterfactual observation is generally unobservable, we can use propensity score matching to find a non-acquiring match or matches that resemble such counterfactual quality. The advantage of propensity score matching is that it can handle dimensionality problems while retaining the quality of traditional matching techniques (Rosenbaum and Rubin, 1983; Guo and Fraser, 2009; Chari et al., 2008; Petrova and Shafter, 2010). Essentially,

propensity score matching generates matched firms that have similar distributions of matching characteristics (covariates) to those of the acquirer. Matched firms also have a similar probability of acquisition to the acquirer. This constraint controls for the confoundedness and replicates conditions of randomized experiments for observational studies, thereby reducing selection bias on observable characteristics (Guo and Fraser, 2009).

Within this framework, matched firms can be found by nearest neighbour matching, mahalanobis or a kernel-based matching technique. The first two techniques are "greedy matching," and they are inferior to the last one. According to Guo and Fraser (2009), the crucial advantage of kernel-based matching is that it takes into account the distance of each control firm within a specified span to the treated firm given a matrix of covariates. While nearest neighbour matching (1-to-1 or 1-to-n) treats control firms equally or assigns the same weight to each control firm, kernel-based matching use a kernel function to assign weight to each control firm so that higher weight is attributed to the control firm which is closest to the treated firm in terms of propensity score and lower weight is attributed to one that is further away. Another advantage of kernel based matching is that the number of control firms is not limited within a small stratum, which is the case of greedy 1-to-n matching. Kernel based matching uses all possible matches within a predefined span (bandwidth), hence more firms are included in the control portfolio of each treated firm. In brief, by incorporating more information about the closeness of control firms to the treated firm and including more firms in the control

portfolio for each treated firm, kernel based matching would arguably generate better estimates of counterfactual outcomes for the outcomes of the treated firm.

As kernel-based matching can mitigate selection on certain observable characteristics, it often yields reasonable results[20] (Blundell and Costa Dias, 2000). However, there is still room for improvement (Girma et al., 2006). In effect, Blundell and Costa Dias (2000) proved that a combination of non-parametric propensity score matching approach with a difference-in-differences technique was effective. By definition, the difference-in-differences estimator takes into account the longitudinal nature of the data and measures *"the excess outcome growth for the treated compared with the non-treated[21]"*. The combined method can further reduce "*unobserved time-invariant individual-specific and common macroeconomic effect components that influence the participation decision* (or treatment assignment)" (Blundell and Costa Dias, 2000; Heckman et al., 1997, 1998). This property of difference-in-differences may serve well in this paper because acquirers (participants) and control firms (non-participants) are occasionally pooled from different countries (geographically mismatched). Therefore, this technique could reduce latent bias caused by differences in macroeconomic factors (temporarily-invariant sources of bias) among acquirers and control firms.

In brief, the combination of propensity score matching and difference-in-differences can deal with the selection of observables and unobservables more effectively than other methods extensively used in the previous studies. This advantage is highly important

[20] *(Blundell and Costa Dias, 2000, p. 438)*
[21] *(Blundell and Costa Dias, 2000, p. 442)*

because *"the power of event study methodology depends crucially on the quality of the benchmark*[22]*"*. As a result, we employ this methodology to estimate the long run abnormal return.

[22] *Dimson and Marsh (1996), p. 119*

3.3. Methodology

3.3.1. Fundamental problem in observational studies

One of the major problems in observational studies (such as program evaluation and event study) is that the counterfactual outcome of an event is generally unobservable. Unlike experimental investigations where the experiments are replicable and the assignment to the treatment of a certain subject is random, the assignment to treatment in observational studies is not random. Therefore a certain level of bias in the selection of treatment might occur, especially when the criteria for selection into the treatment is correlated with the outcome. Therefore, in observational studies it is ideal to be able to approximate conditions of experimental studies where the assignment to treatment is a random process. Rubin (2008) describes this process as a "*design of observational studies to approximate randomized trials*". He argues that *"a crucial idea when trying to estimate causal effects from an observational data set is to conceptualize the observational data set as having arisen from a complex randomized experiment, where the rules used to assign the treatment conditions have been lost and must be reconstructed*".

In this study, one of the main tasks is to pinpoint the abnormal return which is purely the result of cross-border acquisitions between emerging-market bidders (EM bidders) and developed-market targets (DV targets) rather than the result of any other incidents. Since the counterfactual returns are unobservable in this type of study, it is necessary to closely estimate this return so that the final evaluation will be less inflicted by selection

bias. This task is equivalent to identifying an appropriate control firm or control group for the event firm (acquirer) whose return can be used as a counterfactual outcome for impacts evaluation. In this respect, Propensity Score Matching (PSM) is a more contemporaneous framework which enables the identification of a control firm or control group upon a set of ex-ante (pre-event) criteria. More specifically, the purpose of using PSM in this paper is to find a counterfactual firm or group (for the EM bidders when they acquire DV targets) that has not undergone similar acquisitions on the basis of observable characteristics. The trajectory of return of such a control firm or group can then be used as a counterfactual return for the evaluation of M&A impacts.

3.3.2. Neyman-Rubin counterfactual framework

Counterfactual framework is one of the key models in causality investigations. The following part describes the mathematical form of this framework. The statistic literature documents a series of papers by Neyman (1923) and Rubin (1974, 1978 and 1986) that form the background of the counterfactual framework. This framework starts with some fundamental notations.

Y_{1i} The outcome of unit i under treated conditions

Y_{0i} The outcome of unit i under non-treated conditions

W_1 Denotes receipt of the treatment

W_0 Denotes non-receipt of the treatment

Y_i Indicates measured outcome variable

The Neyman-Rubin counterfactual framework can be formulated as follow:

$$Y_i = W_i Y_{1i} + (1 - W_i) Y_{0i} \qquad \text{Eq. 3.1}$$

The key message this formula tries to convey is that researchers cannot just directly link the cause (W_1) and effects (Y_{1i}) under the treatment condition, as they also need to check the outcome under non-treated conditions (Y_{0i}) and then compare the outcome in treated and non-treated conditions. In a metaphoric way of expression, $W_1$and (1-W_1) serve as a switcher that analysts can switch on and off the cause in order to document the difference in effect (Guo and Fraser, 2009, p. 25). As a result the causal effect for unit i is: $Y_{1i} - Y_{0i}$, by definition. However, the fundamental problem in counterfactual frameworks is that it is not possible to observe each individual treatment effect $Y_{1i} - Y_{0i}$ since the outcome under non-treated condition (Y_{0i}) is generally unobservable in non-experimental studies. As a result, it is not possible to measure ***exactly*** what the causal effects under the counterfactual framework are. Nonetheless, the causal effects can be estimated by an examination of the average outcome of units under treated conditions and the average outcome of units under non-treated conditions and then evaluate the mean difference between thetwo groups in the population. More specifically, the average treatment effects can be estimated by the *standard estimator for the average treatment effects*:

$$\tau = E(Y_1|W = 1) - E(Y_0|W = 0) \qquad \text{Eq. 3.2}$$

Where

$E(Y_0|W=0)$ is an estimation of the expectation of counterfactual outcomes

It is important to note that $E(Y_0|W=0)$ is just an effort to approximate the true counterfactual mean outcome $E(Y_0|W=1)$. In an application of the Neyman-Rubin counterfactual framework on a sample representing a population, the standard estimator for the average treatment effects can be modified to:

$$\hat{\tau} = E(\widehat{y_1}|w=1) - E(\widehat{y_0}|w=0) \qquad \text{Eq. 3.3}$$

Where:

$\hat{\tau}$: Estimated average treatment effect

$E(\widehat{y_1}|w=1)$: Estimated mean of outcomes under treated and condition

$E(\widehat{y_0}|w=1)$: Estimated mean of outcomes under non-treated and condition

3.3.3. Unconfoundedness assumption

The Neyman-Rubin counterfactual framework is a useful tool to build a method of estimating counterfactual outcomes. However, in order to apply this framework to actual evaluations, researchers need to impose a further assumption to simulate the condition of randomized experiments. The crucial assumption for actual evaluation is *Unconfoundedness* (Rusenbaum and Rubin, 1983*),* which can be expressed as: (Y_1, Y_0) ⊥W | X

This assumption means that conditional on covariate vector X (which contains conditioning variables), the assignment to either treatment (W_1) or non-treatment (W_0) is independent from the outcome (Y_1, Y_0) of the treatment. Equivalently, covariate X can capture all of the *ex-ante* differences between the treated and control group. Rusenbaum and Rubin (1983) describe this assumption as *Unconfoundedness.* Other studies address this assumption with different names, even though its meaning stays unchanged[23]. The key idea of this assumption is that if there is no difference in covariates between the treated and control group the assignment to treatment or non-treatment is independent from the potential outcomes of the treatment. Only under *unconfoundedness* condition can $E(Y_0|W = 0|X)$ be used as the estimate of the expectation of the theoretical counterfactual outcomes ($E(Y_1|W = 0|X)$. Specifically,

$$E(Y_1|W = 0|X) = E(Y_0|W = 0|X)$$

3.3.4. Counterfactual mean estimators

3.3.4.1. Propensity score matching models

Expected outcomes of counterfactuals can be estimated by the Propensity Score Matching (PSM) model. The key feature of this model is balancing the treated and control groups upon propensity score (i.e. probability of participation or probability of receiving treatment). The resulting sample after data balancing will then be similar to one generated by a randomized experiment where the rule of treatment assignment is

[23] *Unconfoundedness can be used interchangeably with Selection on observables (Barnow and Cain et al., 1980) or Conditional independence (Lechner, 1999) or Exogeneity (Imbens, 2004) or Ignorable treatment assignment (Guo and Fraser, 2009).*

lost (Guo and Fraser, 2009 p. 37). Furthermore, the PSM model allows for matching on a single dimension, which eliminates problems associated with multi-dimension matching and leverages the practicality of the model. According to Rubin (2008) and Guo and Fraser (2009), estimation of propensity score and propensity score matching is *"the most basic ingredient of unconfounded assignment mechanism"*. Within the PSM framework the average treatment effects estimator is formulated as follows:

$$\tau = E(Y_1|W = 1|P(X)) - E(Y_0|W = 0|P(X)) \qquad \text{Eq. 3.4}$$

Where $P(X)$ is the propensity score of the participant and it is a function of observable characteristics that determine the probability of participation.

On the basis of the propensity score, matching can be performed in two alternative mechanisms: Greedy matching (including nearest neighbor matching and mahalanobis matching) and Kernel-based matching

In greedy matching, each treated case is matched with one or more non-treated cases based on the prior estimated propensity scores. For instance, in 1-to-1 matching the non-treated case is the one with a propensity score closest to that of the treated. By definition, matching on propensity score helps control the differences in observable characteristics between the treated and non-treated companies and replicates the random treatment assignment of experiments. In other words, conditioning on the similarity of the observable covariates between the treated and control firms, the treatment assignment is randomized in the matched sample.

We can use greedy matching on the propensity score rather than on a collective set of observable characteristics, because when treated and non-treated have the same propensity score they are likely to share the same distributions of covariates (Rosenbaum, 2002). Moreover, Guo and Fraser (2009) argue that differences may remain in distributions of covariates even in the case of a homogeneous propensity score. However, such difference is "*by chance rather than systematic difference".* As a rule of thumb, chance difference on an individual level may disappear in group level analysis which involves a sufficiently large number of individual cases (e.g. Average Treatment Effects-ATE, or Average Treatment Effects on the Treated-ATT).

The other matching model is kernel-based matching (KBM). Similar to the greedy matching mechanism, KBM allows for 1-to-n matching where the number of non-treated controls is identified within a radius of the propensity score of the treated. However, the advantage of KBM over greedy matching lies in the use of kernel functions or other sophisticated mechanisms (e.g.) to generate weights assigned to the non-treated cases. In principle, KBM uses a larger number of matches than greedy matching but the non-treated outcome in the latter is evenly weighted. Such an outcome in the KBM is weighted so that the outcome of a non-treated firm is assigned a higher weight if its propensity score is closer to that of the treated firm (this technique is often referred to as Kernel smoothing technique). Then the counterfactual outcome in KBM is the weighted average of non-treated outcomes. The primary interest of this study is to find the average difference between treated outcome and its counterfactual, which is the

treatment effect. Therefore, we need to measure the average treatment effect on the treated (ATT) with the following formula:

$$ATT = \frac{1}{n_1}\sum_{i\in T}^{n_1}\left[Y_{1i} - \sum_{j\in C}^{n_2} W(i,j)Y_{0j}\right] \quad \text{Eq. 3.5}$$

Assign $T = \{i_1, i_{2,} \dots, i_{n_1}\}$ and $C = \{j_1, j_2, \dots, j_{n_2}\}$ as a respective set of treated and control cases; (i,j) is the index of individually treated and control cases; (Y_1, Y_0) denotes the outcome of the treated and control cases respectively; $W(i,j)$ is the kernel weight function constructed on the basis of estimated propensity scores. $\sum_{j\in C}^{n_2} W(i,j)Y_{0j}$ is the weighted average of all non-treated outcomes of cases that have the propensity score fall within the propensity radius of the treated. Thus, $\sum_{j\in C}^{n_2} W(i,j)Y_{0j}$ is the counterfactual outcome estimator in the KBM.

There is one condition that KBM needs to meet. ATT calculated with the KBM technique implies that control and treated cases must fall in a common support region since treated cases falling off the support region may have zero matches. Even if the treated and control groups share the same common support region, the potential matches for the treated case may be sparse, which undermines the power of the KBM method. In order to deal with this issue, Heckman (1997) recommend a trimming strategy. Various levels of trimming such as 2%, 5% or 10% at two ends of the treated and control distribution can be cut off to decrease the chance that both the treated and control cases fall off the common support region. Different trimming specifications can

therefore be treated as *sensitivity analysis of ATT against the distributional property of propensity scores* (Guo and Fraser, 2009).

3.3.4.2. Non-parametric approach

This approach is essentially an extension of the propensity score matching method. Current literature extends the PSM framework and takes into consideration the longtitudinal nature of a certain sample (Heckman et al., 1997, 1998). If the outcomes of the treated (and control) are observed at two different points in time, PSM can then be combined with the difference-in-differences technique (DIDs) to estimate the counterfactual outcome in a more dynamic fashion. DIDs estimator, while retaining the quality of the PSM method, can further reduce selection bias associated with temporal time-invariant *unobservables* (Blundell and Costa Dias, 2000; Girmal et al., 2006). The DIDs estimator is expressed as follows:

$$DIDs = \frac{1}{n_1}\sum_{i\in T}^{n_1}\left[\left(Y_{1t_1i} - Y_{1t_0i}\right) - \sum_{j\in C}^{n_2} W(i,j)(Y_{0t_1j} - Y_{0t_0j})\right] \qquad \text{Eq. 3.6}$$

Assign $T = \{i_1, i_{2,} \dots, i_{n_1}\}$ and $C = \{j_1, j_2, \dots, j_{n_2}\}$ as a respective set of treated and control cases; (i, j) is the index of individually treated and control cases; (Y_1, Y_0) denotes the outcome of treated and control cases respectively; $W(i,j)$ is the kernel weight function constructed on the basis of estimated propensity scores; t_0, t_1 denotes the time point before and after the intervention, respectively; $\left(Y_{1t_1i} - Y_{1t_0i}\right)$ is

outcome growth of the treated; $(Y_{0t_1j} - Y_{0t_0j})$ *outcome growth* of the non-treated; $\sum_{j\in C}^{n_2} W(i,j)(Y_{0t_1j} - Y_{0t_0j})$ is the weighted average of all non-treated *outcome growths* of cases that have a propensity score fall within the propensity radius of the treated. Thus $\sum_{j\in C}^{n_2} W(i,j)(Y_{0t_1j} - Y_{0t_0j})$ is the *outcome growth counterfactual estimator* in this combined approach.

3.3.4.3. Stock performance measure

We use the standard Return Index (RI) to measure the performance outcome of a firm at any point in time. Return index, by definition, is a "*theoretical growth in the value of a share held over a specified period, assuming that dividends are re-invested to purchase additional units of that stock at the closing price applicable on the ex-dividend date*[24]" The index is formulated as follows:

$$RI_t = RI_{t-1} * \frac{PI_t}{PI_{t-1}}(1 + \frac{DY_t}{100} * \frac{1}{N})$$

Where

RI_t: $Return\ index\ on\ day\ t$

RI_{t-1} : $Return\ index\ on\ day\ t-1$

PI_t: $Price\ index\ on\ day\ t$

PI_{t-1}: $Price\ index\ on\ day\ t-1$

[24] *Datastream glossary.*

DY_t: $Dividend\ yield\ \%\ on\ day\ t$

N: $Number\ of\ working\ days\ in\ a\ year\ (260\ days)$

RI measure fits well into our methodology since we can calculate outcome growth ($Y_{1t_1i} - Y_{1t_0i}$) with ease:

$$Y_{1t_1i} - Y_{1t_0i} = \frac{RI_{t2} - RI_{t1}}{RI_{t1}} * 100$$

3.3.5. Propensity score estimation models

3.3.5.1. The choice of covariates

Covariates (or conditioning variables) are determinants of propensity score. Choosing appropriate conditioning variables is very important in observational studies since treatment effects are sensitive to the specification of such variables (Guo and Fraser, 2009). Two issues should be taken into consideration in specifying the propensity score estimation model. First, covariates must drive both treatment assignment and treatment outcome so that the conditional independence assumption (CIA) or unconfoundedness is satisfied. Second, only important variables are included in order to maintain the feasibility of the sample size. Theoretically, it is ideal to include a large set of conditioning variables in the estimation model. However, as the number of conditioning variables increases, the range of common support regions is narrowed down, perhaps because less non-treated cases are qualified as a match. A narrow common support region undermines the power of propensity score matching (Todd,

2005). When a large number of observations is dropped from the sample, the results will increasingly be prone to selection bias. In this paper, paying attention to sample size is important since data unavailability is an endemic problem in these markets.

We choose firm size, market-to-book ratio and cash level as conditioning variables. As shown in the earlier part about the drawbacks of the single-index model, controlling for size and market-to-book ratio reduces the selection bias in the final results (Dimson and Marsh, 1996; Barber and Lyon, 1997; Agrawal et al., 1992). In addition, Rau and Vermaelen (1997) show that market-to-book is associated with acquisition probability, which then meets the treatment assignment assumption of PSM. Furthermore, size and market-to-book are also key determinants of stock return in both developed markets (Fama and French, 1992) and some emerging economies such as Turkey (Asku and Onder, 2003). Therefore, control for these variables satisfies the assumption that covariates must be determinants of the treatment outcome.

Cash is included as a conditioning variable since a high level of cash fuels the agency problems. According to Jensen (1986)'s free cash flow study, excessive cash provides the managers resources at their discretion and they tend to waste it on unprofitable investment projects, including mergers and acquisitions. Besides, as cash-rich firms are potential takeover targets (Song and Walkling, 1993; Bruner, 1988), managers may be motivated to engage in acquisitions in order to quickly increase the firm size with excessive cash and ultimately protect their position. In emerging markets, agency problems are more serious due to weak institutionalization (Kim, 2000; Kale, 2004,

Bhaumik et al., 2010). Without strict monitoring, managers in these countries have more reasons to waste cash on value-destroying acquisitions.

We further control the fixed effects of macroeconomics factors. Additionally, we include year dummies in the covariate vector in order to keep acquirers and controls in the same wave of mergers and acquisitions. As mergers tend to occur in waves (Martynova and Reeneborg, 2009), inclusion of year dummies can improve the quality of the match.

In a nutshell, the general function of the propensity score model for this paper is as follows:

$$Prob(Acquisition_t = 1) = f(Size_{t-1}, Mtb_{t-1}, Cash_{t-1}, Country\ variable, Year\ dummies)$$

3.3.5.2. Selection model specification

We need to identify the proper specification of the selection model so that the covariate distributions of acquirers and non-acquirers are sufficiently overlapped after matching. The procedure to find such a model is described in Rosenbaum and Rubin (1985), Dehejia and Wahba (2002) and Guo and Fraser (2009). It includes repeated tasks from in-turn running various specifications of the logistics model to matching then using bivariate tests to check until imbalances in the matched sample become insignificant. The problem is this procedure is only feasible in nearest neighbor matching where the matched firm is identifiable for each treated firm with the help of software (pstest in psmatch2). However, when the *kernel-based matching* is used, "*pstest does not make*

sense in this case since more controls are used to calculate the counterfactual outcome than the nearest neighbor only" (Leuven and Sianesi, 2003, pstest manual). Therefore the most appropriate selection model for the local linear regression technique is likely to be the simple logistics model, where the choice of conditioning variables are theoretically driven as explained in the earlier part of this paper. The appropriateness of this selection model is further justified by the results of balancing tests.

Table 3.1: Propensity score estimation model

Covariate	Odd ratio	Standard error	Z-statistic	p-value
Firm size	1.597547	0.0555485	13.470	0.000
Market-to-book ratio	0.979417	0.0130576	-1.560	0.119
Cash ratio	6.001688	2.295293	4.690	0.000
Year dummies	Yes			
Bidders country dummies	Yes			
Number of observations	35932			

3.3.5.3. Significant difference before matching

The following table presents the descriptive statistics of main characteristics which are theoretically considered as key determinants that jointly distinguish acquiring and non-acquiring firms. The sample comprises 281 treated firms and more than 35,000 control firms. Noticeably, on average acquirers seem to have a larger size and higher market-to-book ratio. The acquirers median of size and market-to-book are 6.07 and 2.17, respectively, while the corresponding figures of control firms are 4.87 and 1.54. These

figures are consistent with conventional wisdom that firms with larger size and higher market-to-book ratio (glamour firms) have greater resources and a better chance of engaging in mergers and acquisitions. The cash holding statistics, on the contrary, show no difference in the average cash holding ratio between acquirers and control firms, whilst the free cash flow theory suggests that acquirers tend to hold larger amount of cash. Larger size and higher market-to-book ratio observed in the acquirer group suggests that the selection to acquisition is not random. Furthermore, the Hotelling test confirms that the vector of covariate means are significantly different between the two groups, suggesting that further steps are required to remove such difference in the vector of means so that subsequent estimation and analysis is not plagued with selection bias.

Table 3.2: Descriptive statistics of conditioning variables (covariates) before matching

	Bidders characteristics			Control's characteristics			Wilcoxon rank-sum		Median test		Hotelling test
	mean	median	std	mean	median	std	Z statistic		Pearson chi2(1)		F-statistic
Mtb ratio	3.479075	2.17	4.901328	3.821503	1.54	56.28072	-6.118	***	35.2762	***	51.73 ***
Size	6.078712	6.071699	1.872089	4.960478	4.870061	1.51355	-10.765	***	73.3458	***	
Cash ratio	0.1597	0.114168	0.148392	0.148903	0.104552	0.146523	-1.761	*	2.2417		
N	35651			281			***,* significant at 1% and 10% level, respectively				

Note: Market-to-book ratio and Cash holding over total assets are calculated on the basis of local currency in order to eliminate the impacts of exchange rates fluctuation. Total assets on the other hand are absolute value rather than ratio, therefore this variable is calculated in USD to serve the cross-country comparison purpose.

3.3.5.4. Balancing tests

In order to justify for the specification of selection model used in this study, balancing tests are conducted in a Kernel matching setting to see whether the observed differences before matching are eliminated. The result shows that after matching, the covariates no longer jointly and significantly determine the probability of acquisition, suggesting the assignment to treatment is random and conditional on the propensity score estimates generated from the selection model. In other words, the specification of the selection model is successful in removing differences in the distributions of covariates between treated and control groups.

The following table presents the results of balancing tests in Epanechnikov kernel matching for different situations. There are five sample situations corresponding to five alternative event windows. This study uses three types of test to check for covariate balance after matching: Standardised bias, t-test and joint insignificance test. Regarding standardised bias tests, the results in both tables show that bias is reduced significantly after matching, particularly where there are remarkable decreases in size and cash biases, perhaps because size and cash are significant determinants of event participation as illustrated in Table 3.1. In addition, all of the standardised differences in all sample situations are less than 20 after matching, which according to Rosenbaum and Rubin (1985), suggests no problem in matching performance. Similar results are achieved in testing for the mean differences of covariates before and after matching. In the unmatched sample (i.e. before matching), the mean size of the treated and control firms are significantly different in all settings. Such differences are consistently eliminated after matching. Market-to-book and cash ratios are also balanced after kernel matching, even though the effects of these matching procedures are not as powerful on these covariates as on size. Finally, joint insignificance tests also show satisfactory matching results since performing logistic regressions on matched samples results in the joint insignificance of matching covariates and a reduction of fit statistic (Pseudo R-squared) in all cases. These results prove that after matching the covariates in the matched sample are no longer jointly significant determinants of event participation (acquisition decision), therefore indicating that the specification of a selection model leads to satisfaction of *ignorable treatment assignment condition*.

Table 3.3: Kernel matching balancing tests

It is noted that the x-year (x=1 to 5) wealth effect is the average treatment effect on the treated (ATT), where the outcome variable (return growth rate during event window) is calculated using the difference-in-differences technique. An unmatched sample is a sample before matching, and a matched sample is one after matching. Standardized bias test results represent the performance of the matching process. According to Rosenbaum and Rubin (1985), if standardized bias is less than 20 the matching process is deemed satisfactory. T-value and p-value are statistics of the test for the mean differences of covariates before (unmatched sample) and after matching (matched sample). The null hypothesis of this test is that the means of covariates are equal between the treated and control groups. Finally, the Pseudo R-squared indicates the explanatory power of the selection model. Pseudo R-squared close to zero is desirable in matching as it shows that the covariates cannot jointly distinguish the acquirer and control firm in the matched sample, which essentially satisfies the unconfoundedness assumption. Statistics of likelihood-ratio test are also indicators of joint insignificant test. Being unable to reject the null hypothesis means conditioning variables are unlikely to jointly determine the treatment assignment or program participation of the firm.

Matching covariates	**Sample type**	**1-year wealth effect**		**2-year wealth effect**		**3-year wealth effect**		**4-year wealth effect**		**5-year wealth effect**	
		Standardised bias	**t-value**	**Standardised bias**	**t-value**	**Standardised bias**	**t-value**	**Standardised bias**	**t-value**	**Standardised bias**	**t-value**
size	Unmatched	82.3	14.58	79.7	13.01	70.6	10.92	71.2	9.94	68.6	8.09
	Matched	1.2	0.14	0.0	0.00	-6.3	-0.59	-5.3	-0.45	-8.0	-0.58
mtbv	Unmatched	0.1	0.01	4.1	0.45	9.5	1.06	9.3	0.93	13.3	1.24
	Matched	0.2	0.09	0.8	0.23	2.2	0.37	4.7	0.86	6.4	0.75
cash ratio	Unmatched	6.0	1.00	6.2	0.95	6.0	0.87	3.9	0.51	5.0	0.59
	Matched	0.5	0.05	1.0	0.10	1.7	0.16	-2.3	-0.19	1.6	0.11

Table 3-3 continues

Sample type	Pseudo R2	LR chi2	Pseudo R2	LR chi2	Pseudo R2	LR chi2	Pseudo R2	LR chi2	Pseudo R2	LR chi2
Unmatched	0.062	199.07	0.060	156.08	0.048	110.14	0.049	92.84	0.045	62.51
Matched	0.000	0.02	0.000	0.06	0.001	0.61	0.002	1.13	0.003	1.14

3.4. Data

3.4.1. Data sources

The mergers and acquisitions events are collected for the period of 1990-2010 in the Thomson One Banker database (T1B). Originally all events since 1980 were collected, but the events in the 1980-1990 period were dropped since covariates and return data are not simultaneously available to form a usable record for this examination. The mergers and acquisitions package in T1B provides deal-specific characteristics including countries and industries of acquirers and targets, deal value, payment method, attitude of the acquirers, percentage of target shares owned by acquirer after the transaction, targets public status and the announcement and completion date of the merger transaction. The matching procedure required the identity of acquirers and peer firms (SEDOL codes) and data of conditioning variables (size, market-to-book and cash holding over total assets ratio). The former is again collected from T1B, while data of the latter is collected from WorldScope. GDP data from 1990 to 2010 is collected from the World Bank website. Table 3.4 summarizes our data sources for different types of data.

Table 3.4: Data sources

Data	**Source**
Acquirer, Control firms name and SEDOL	Thomson One Banker
Acquirer, target industry and industry SIC codes	
Acquirer, target country	
Deal announcement date	
Deal value	
Percentage of shares owned by acquirers before and after the acquisitions	
Deal financing (cash-financed or stock-financed or mix)	
Acquirer attitude (Friendly, Hostile, Neutral)	
Acquirer public status	
Acquirer and control market capitalization, market-to-book ratio, cash holding, total assets	
Stock prices and return indexes of acquirers and control firms	Datastream

3.4.2. Distribution of events by country

The table below shows the distribution of mergers and acquisitions events by country of bidder and country of target. The initial sample contains 1130 events (Table 3.5), but 568 events were filtered out due to the unavailability of covariates (size, market-to-book and cash holding ratio) and a further 281 events were dropped because of duplications. This study only keeps the latest events (by completion date) if the bidder has engaged in multiple events in its history[25]. Therefore 281 events remain in the sample, and this sample is used for a later matching procedure. The table shows a common pattern that bidders in more advanced economies in emerging countries such as India and Malaysia are more active in acquisitions of developed market firms, whilst targets in more developed countries such as the US and UK are more frequently acquired. This pattern seems consistent with the *bootstrapping hypothesis,*[26] which states that by bootstrapping themselves in the higher standard of corporate governance firms learn new capabilities.

Table 3.5: Breakdown of M&A deals in Thomson One Banker

Target country	Acquirer country	Number of deal
All	All	139,895
All	Emerging	13,991
Developed	Emerging	1,130

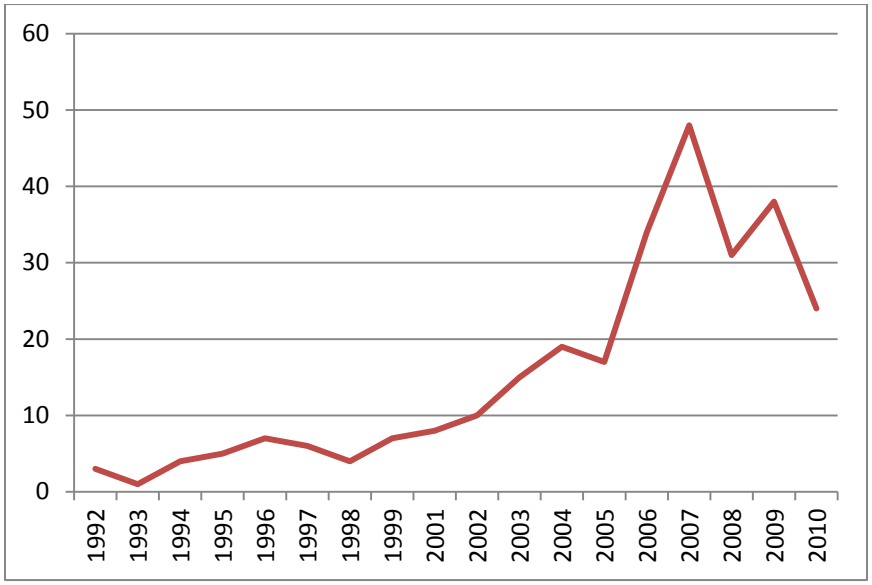
[25] *If the earliest event is kept then the estimates of abnormal returns fail to accommodate the bidders experience in cross-border acquisitions.*
[26] *Khanna and Palepu (2004)*

Table 3.6: Distribution of M&A events by country

Bidder Country	Frequency	Percent	Target country	Frequency	Percent
India	96	34.16	USA	86	30.6
Malaysia	51	18.15	UK	52	18.51
South Africa	34	12.1	Australia	47	16.73
Taiwan	25	8.9	Canada	17	6.05
China	20	7.12	Germany	15	5.34
Russia	8	2.85	Italy	10	3.56
Mexico	7	2.49	Netherlands	7	2.49
Philippines	6	2.14	Japan	6	2.14
Poland	6	2.14	Spain	6	2.14
Korea	5	1.78	Denmark	4	1.42
Brazil	4	1.42	Finland	4	1.42
Egypt	3	1.07	Swiss	4	1.42
Hungary	3	1.07	Austria	3	1.07
Thailand	3	1.07	Belgium	3	1.07
Turkey	3	1.07	France	3	1.07
Argentina	2	0.71	Norway	3	1.07
Columbia	2	0.71	Sweden	3	1.07
Indonesia	1	0.36	Iceland	2	0.71
Pakistan	1	0.36	Luxembourg	2	0.71
Peru	1	0.36	Portugal	2	0.71
Total	**281**	**100**	Ireland	1	0.36
			New Zealand	1	0.36
			Total	**281**	**100**

3.4.3. Distribution of events by year

Figure 3-1: Number of deals by year



Source: Directly from our sample

This figure illustrates the number of deals in the final sample. 281 mergers and acquisition events are documented from 1988 to 2010. Events from 2011 onwards are excluded because stock returns and return indices are needed for at least one whole year after the announcement date so as to accommodate a minimum one year event window. Overall, the graph shows an increasing trend of mergers and acquisitions activity in emerging markets. However, the number of deals each year is very small, even though it is common for infant markets of corporate control. Before 2000, less than 15 acquisitions are observed in every single year. After 2000, the number of acquisitions increased rapidly and reached the peak of 112 in 2008. In 2009, the number of deals dropped remarkably, perhaps driven by the Asian economic crisis. This pattern

reflects changes of business environment in emerging countries. Firms in these countries previously operated in closed economies characterized by a range of financial and regulatory restrictions, and their market for corporate control is virtually non-existent. However, such restrictions are gradually being removed over the years along with the economic liberalization process (Kale, 2004). As a result, there is a growing number of firms in emerging markets which have embraced such opportunities to play their part in acquisition markets, especially when some of them make their way into more advanced countries.

3.4.4. Distribution of events by category

Table 3.7: Breakdown of sample by categories

Category		Freq.	Percent.
Target status	Private	202	71.89
	Public	79	28.11
Deal attitude	Friendly	265	94.98
	Unfriendly	14	5.02
Relatedness	Related acquisition	155	55.16
	Conglomerate acquisition	126	44.84
Acquisition for control	Acquisition of less than 50% targets shares	75	27.47
	Acquisition for control (>50%)	198	72.53
Payment method	Cash Payment Only	114	40.57
	Non-cash payment	167	59.43
Multievent bidders	Bidders with no previous experience	190	67.62
	Bidders with previous experience	91	32.38

The above table shows the frequency and percentage of M&A deals by category in the sample of 281 bidders in emerging countries. It is noted that RELATEDNESS criterion is

defined on the basis of two-digit SIC. Acquisitions where the acquirer and target share the same two-digit SIC are sorted as related acquisitions, otherwise they will be classed as conglomerate acquisitions. Moreover, we assume bidders have full control over the main decisions of target firms (such as technology transfer or management training and sharing know-how) when they have more than 50% of the targets share. If they own less than 50%, they only conduct partial acquisitions. With regards to multi-event bidder criteria, the sample of event firms can be partitioned into bidders with previous experience in acquiring firms in developed markets and those bidders that have no such experience.

There are several remarks in the sample structure. First, most of the deals involve private targets (>70%), so perhaps bidders encounter less competition in acquiring private firms than acquiring public firms. Plus, acquiring private firms generally entails lower premiums since bidders do not need to deal with the "free rider" problem. As a result, private targets mean a lower cost of entry in developed markets. Secondly, nearly 95% are friendly deals[27]. The structure implies severe obstacles in making opposed bids. The dominance of friendly bids could be evidence of a lack of resources or a lack of long term strategy to pursue the deal aggressively, or simply because cross-border transaction costs are already too high so additional costs incurred from dealing with opposition might cancel out potential synergies. Finally, acquisitions for corporate control also account for more than 70% of deals, which is consistent with the

[27] *In accordance with the definitions of Thomson One Banker, the board recommends the offer in friendly bid. If the board does not, the bid will be considered unfriendly.*

“incomplete contract” hypothesis which states that a targets management is less likely to transfer core values of the firm to bidders in emerging markets unless they are forced to surrender control of residual rights.

3.5. Empirical results and discussion

3.5.1. Full sample analysis

Table 3.8 presents the wealth effects as a result of cross-border mergers and acquisitions, where acquirers are listed in 17 emerging countries and target firms are from 20 developed markets. The long-run effects are estimated in five settings of event window, ranging from one to five years. Given that the final results generated from the combination of propensity score matching and difference-in-differences are sensitive to different trimming and bandwidth value[28], we use three specifications to check the consistency of the results. The first specification is the default setting for local linear regression technique in psmatch2, where the default bandwidth is 0.8. The second specification retains the default bandwidth but uses a trim value of 5%, meaning *5% of treatment observations, at which the propensity score density of the control observations is the lowest*[29], are dropped from the sample. Such trimming specification in effect imposes a common support region in the matching procedure in order to control for a problem that treated firms outside the common support region are used for matching. Specification 3 uses a smaller bandwidth of 0.5, meaning that less control firms are employed in the calculation of the counterfactual outcome.

The technical term for the estimated wealth effect is average treatment effects on the treated (ATT), which *measures the average change in return growth rate as a result of the intervention* (i.e. acquisition event). This abnormal return is different from one

[28] *Guo and Fraser (2009)*
[29] *psmatch2 manual (Stata11)*

yielded in traditional single-index models and ordinary propensity score matching. The abnormal return estimated in the latter two methods measures *the average change in return (instead of return growth rate)* as a result of the acquisition. As mentioned in the methodology section, the difference-in-differences technique specifies wealth effects as the average change in return growth rate, thereby mitigating selection on unobservable and "temporal time-invariant" characteristics. As a result, the abnormal returns in this study cannot be directly compared with ones measured in the single-index model or traditional matching method.

It is noteworthy that as the number of days in the window increases the number of acquirer and control firms in the matching sample decreases. The reason for this is that the number of completed deals has a tendency to increase gradually over the last five years,[30] and therefore later deals can only be examined in a shorter event window.

This table also shows a strong tendency of negative wealth effects in all specifications. ATT in all settings has negative sign, even though only the last three abnormal returns in the three, four and five year event windows are statistically significant at a 95% confidence interval. More specifically, three-year abnormal return growth rate is around 26 to 28%, meaning that the return growth rate of acquirers would have been 26-28% higher on average had they not engaged in the acquisition event. The range of abnormal returns for the four year and five year event windows are approximately 35-40% and 61-71%, respectively. The overall result therefore, manifests strong evidence of the

[30] *See Figure 1*

acquirers underperformance in the course of three, four and five years after the completion of merger events.

The finding of a highly negative abnormal return is a bit surprising in consideration of some previous findings in the literature. Rau and Vermaelen (1998) find a negative abnormal return of -4.04%, while Datta et al. (2001) find a negative figure of -10.67% and Conn et al. (2005) find -19.78% in a three year event window. In addition, Agrawal et al. (1992) finds acquirers significantly underperform by -10.26% in a six year event window. Nonetheless, the finding of a highly negative abnormal return in this study is not extraordinary. Loughran and Vijh (1997) examine the wealth effects of mergers and acquisitions in US markets and find five year abnormal returns of around 60% in some settings. Kohers and Kohers (2001) examined this issue in US high tech firms and found three year abnormal returns of more than 32%. Gao and Sudarsanam (2003) found that high-tech UK firms underperform by more than 32% after just one year. The remarkable discrepancy in our results and those in previous studies can be partially attributed to a much higher level of market volatility in emerging markets compared to the volatility in well-established markets.

Table 3.8: Wealth effects on full sample

The event window is calculated from the completion date of the merger to one or several years after that. The number of acquirers and total firms decreases with the longer event window because investing in developed countries is a recent phenomenon for emerging-markets acquirers, therefore a low number of acquirers have long ex-post track records. This number indicates that a large number of deals in the samples were completed within the last five years. Specification 1: Default setting of local linear regression technique in psmatch2 where no trimming is made and bandwidth is set to 0.8. Specification 2: 5% of the treated cases are trimmed in order to drop cases in the off-support region. Specification 3: The bandwidth is set to a smaller value of 0.5, meaning that a smaller number of control cases are used in the calculation of the counterfactual outcome. Treated off-support: A number of cases fall out of the on-support region. They are observations whose propensity score is higher than the maximum or less than the minimum propensity score of the controls. ATT: average treatment effects on the treated firms, which has been clarified in the methodology section.*: Significant at 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

		Specification 1			**Specification 2**			**Specification 3**		
Event window	**Number of Treated/Total**	**Treated off support**	**ATT**		**Treated off support**	**ATT**		**Treated off support**	**ATT**	
one-year	277/351615	0	-0.0094998		13	-0.0079936		0	-0.0018326	
two-year	226/26242	1	-0.0710932		11	-0.0774486		1	-0.0713981	
three-year	201/22707	1	-0.2613207	*	10	-0.2806422	*	1	-0.2591625	*
four-year	165/19891	1	-0.3679601	*	8	-0.3970317	*	1	-0.3538264	*
five-year	120/14279	0	-0.6913664	*	6	-0.7140772	*	0	-0.6166616	*

3.5.2. Subsample analysis

A number of studies in the literature have shown that mergers and acquisitions with particular characteristics may yield positive abnormal returns for the acquirers. For instance, cash-financed acquisitions (Loughran and Vijh, 1997; Rao and Vermaelen, 1998), acquisitions of firms in the related industry (Markides and Itner, 1994; Singh and Montgomery, 1987), acquisitions for corporate control (Chari et. al. 2009), acquisitions where acquirers have experience in the past, or acquisitions during a particular period of time (Kale, 20004) are documented to have positive effects on the wealth of acquirers shareholders. We therefore draw several sets of subsamples based on the above criteria from the full samples in order to further check the robustness of wealth effects after controlling for such influential factors. More specifically, the sets of subsamples include acquirers in which acquisitions are funded by cash, acquisitions of firms in the related industry, acquisitions for corporate control, acquirers who have experience of cross-border acquisitions in the past, or acquisitions which occurred in the current merger wave which is marked by the year 2003 onward.

3.5.2.1. Experience in cross-border acquisitions

To examine whether experience has any positive impact on the long-run performance of the acquirer, the examination procedure for the full sample is applied to the sample which consists of control firms and all acquirer that haves conducted more than one acquisition. For each multi-event acquirer, only the observation with the latest

completion date is kept so that the consolidated wealth effects of previous events can be examined. The result is reported in the following table.

Table 3.9 reports the results of the wealth effects of M&A on two groups of acquirer: one with CBA experience and the other group only includes newcomers. As can be seen from the table, the newcomer underperforms significantly after four and five years compared to the performance of experienced acquirer. The experienced acquirer no longer significantly underperforms in this setting, even though the result of the full sample (Table 3.8) indicates significantly negative impacts for the three, four and five year event windows. This finding is consistent in three different specifications and suggests a certain impact of developed-market experience in the abnormal performance of the acquirer. Such an impact is minor since it cannot overturn the strong negative impacts of M&A events to create positive wealth gains for acquirers shareholders.

Table 3.9: Wealth effects of acquirers with CBA experience

ATT: average treatment effects on the treated (i.e. wealth effect). Specification 1: Default setting of local linear regression technique in psmatch2 where no trimming is made and bandwidth is set to 0.8. Specification 2: 5% of the treated cases are trimmed to drop cases in the off-support region. Specification 3: The bandwidth is set to a smaller value of 0.5, meaning that a smaller number of control cases is used in the calculation of the counterfactual outcome. *: Significant at a 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

	Specification 1		**Specification 3**		**Specification 3**	
Event window	**Prior exp.**	**No exp.**	**Prior exp.**	**No exp.**	**Prior exp.**	**No exp.**
	ATT	**ATT**	**ATT**	**ATT**	**ATT**	**ATT**
one year	0.0503338	-0.027608	0.0589615	-0.0286786	0.052285	-0.0251211
two year	-0.042089	-0.0874687	-0.0300026	-0.1063324	-0.0432672	-0.0873121
three year	-0.2973804	-0.2353713	-0.2947782	-0.2506002	-0.2985368	-0.2389561
four year	-0.2724165	-0.3992467 *	-0.2724165	-0.4261084 *	-0.2542419	-0.3733256 *
five year	-0.2999706	-0.7815655 *	-0.2999706	-0.8155929 *	-0.2524284	-0.7017829 *

3.5.2.2. Related vs. Conglomerate acquisition

We examine whether the wealth effect of related firms differs from that of conglomerate acquisitions given the infancy of the market for corporate control in emerging countries. To examine this issue, the full sample is partitioned into two groups: one includes observations of related acquisitions and the other group contains observations of conglomerate acquisitions. The relatedness is defined upon a two-digit SIC code. Acquirer and target are related if they share the same two-digit SIC and are not related otherwise.

Table 3.10 shows that acquirers in related acquisitions significantly underperform in all specifications after four years from the completion of the event, whilst acquirers in conglomerate acquisitions significantly underperform after five years in two specifications. No significant evidence of a positive wealth effect is reported for both groups of acquirers. There is a tendency that an acquirer in a related acquisition has a worse performance to one in conglomerate acquisition in every corresponding event window on average. However, this observation is not statistically verified. In short, we expected to find positive impacts of unrelated acquisition but find some evidence of a significant underperformance for this type of acquisition. This result suggests a strong nature of value destruction of acquisitions in our particular study.

Table 3.10: Wealth effects in related and conglomerate acquisitions

ATT: average treatment effects on the treated (i.e. wealth effect). Specification 1: Default setting of local linear regression technique in psmatch2 where no trimming is made and bandwidth is set to 0.8. Specification 2: 5% of the treated cases are trimmed to drop cases in the off-support region. Specification 3: The bandwidth is set to a smaller value of 0.5, meaning that smaller number of control cases is used in the calculation of counterfactual outcome. *: Significant at 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

Event window	**Specification 1**		**Specification 3**		**Specification 3**	
	Related	**Unrelated**	**Related**	**Unrelated**	**Related**	**Unrelated**
	ATT	**ATT**	**ATT**	**ATT**	**ATT**	**ATT**
one year	-0.1278941	0.0866509	-0.1310043	0.0867789	-0.1220711	0.0791636
two year	-0.1683895	0.0028916	-0.1751241	0.0088281	-0.1715971	0.0161309
three year	-0.2954098	-0.2250474	-0.3291019	-0.2281891	-0.298377	-0.2155707
four year	-0.4730157 *	-0.280053	-0.50843 *	-0.2708524	-0.4617662 *	-0.242835
five year	-0.7535396	-0.5778723 *	-0.7681	-0.5718103 *	-0.7163161	-0.5075691

3.5.2.3. Method of payment

The examination of this issue cast some light on whether the signal of payment method has a long memory effect on an acquirers performance. We proceed by dividing the full sample into two groups: one includes deals funded by cash only and the other group consists of deals funded by stock or by mixture of stock and other assets. The result is reported in Table 3.11.

Table 3.11 shows that the significant underperformance reported in the full sample result (Table 3.8) disappears in the cash-funded subsample. Meanwhile, some significant evidence of significant negative impacts remains in the settings of the three and five year event windows, and this evidence is consistent in three specifications. Also, the magnitude of negative impacts on acquirer using cash (although not significant) is smaller than that of acquirers using non-cash payments. This evidence suggests that paying by cash has a less negative impact on an acquirers performance than paying otherwise. This finding is not consistent with Loughran and Vijh (1997) and Moeller et al. (2004), who document positive effects of cash payment on the performance of bidders in developed markets.

Table 3.11: Effects of payment method

ATT: average treatment effects on the treated (i.e. wealth effect). Specification 1: Default setting of local linear regression technique in psmatch2 where no trimming is made and bandwidth is set to 0.8. Specification 2: 5% of the treated cases are trimmed to drop cases in the off-support region. Specification 3: The bandwidth is set to a smaller value of 0.5, meaning that a smaller number of control cases is used in the calculation of counterfactual outcome. *: significant at 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

Event window	**Specification 1**		**Specification 3**		**Specification 3**	
	Cash	**Non-cash**	**Cash**	**Non-cash**	**Cash**	**Non-cash**
	ATT	**ATT**	**ATT**	**ATT**	**ATT**	**ATT**
one year	-0.0112904	0.0092247	-0.0116033	-0.0055821	-0.0082974	0.0102665
two year	-0.0620575	-0.0865666	-0.0432649	-0.1029444	-0.0652089	-0.0867173
three year	-0.1398618	-0.3982647 *	-0.130925	-0.4258754 *	-0.1644433	-0.3906915 *
four year	-0.2561195	-0.5368785	-0.2629488	-0.5415291	-0.263144	-0.4886269
five year	-0.4375748	-0.986899 *	-0.4480883	-0.9705498 *	-0.4248568	-0.8913002 *

3.5.2.4. Acquisition for corporate control

This paper examines whether acquisition for corporate control generally creates or destroys the value of an acquirer in the long run. To do that, we divide the full samples into two subsamples: one includes acquisitions where the acquirer holds 50% of the targets outstanding shares afterwards, and the other sample includes acquisitions of a minority stake where less than 50% of the targets shares are controlled by the acquiring firm after the successful bid. Table 3.12 reports the result.

Table 3.12 illustrates that acquirers in both acquisitions for control or for minority interest consistently and significantly underperform in the five-year event window. The level of underperformance in the five year window ranges from 61 to 67%. The story is different in the three and four year event windows, where the underperformance is consistently significant in acquisitions for corporate control and is also consistently *insignificant* in acquisitions for minority interest. This finding suggests that gaining control rights appears to fail to create greater wealth for bidders shareholders. Compared with acquisitions for minority interests, it even destroys a significant value after three and four years. This finding is therefore different from Chari et al. (2008), as they find acquisitions create small but positive impacts on the bidders performance. The difference can be attributed to the difference in the location of targets and acquirers. Their targets are in emerging countries and the acquirers are in developed countries, while this essay examines acquirers in emerging countries and targets in developed countries. A plausible scenario for this result is that acquisitions in emerging countries

are severely inflicted by free-rider and agency problems, where bidders are likely to engage in unprofitable mergers and acquisitions. Alternatively, acquisition for control may have a positive impact, but such an impact is outweighed by the transaction cost. In the former scenario acquisition destroys value, and therefore more targets shares acquired means greater harm to the bidders shareholders.

In a nutshell, this essay finds that the control in this specific context does not have positive impacts on the acquirers long-run performance. Instead, the finding suggests the value destruction nature and the dominance of agency costs over materialized synergies of control.

Table 3.12: Wealth effects in acquisitions for corporate control

Control: bidders own more than 50% of the targets share post-acquisition. Minority: bidder owns less than 50%. ATT: average treatment effects on the treated (i.e. wealth effect). Specification 1: Default setting of local linear regression technique in psmatch2 where no trimming is made and bandwidth is set to 0.8. Specification 2: 5% of the treated cases are trimmed to drop cases in the off-support region. Specification 3: The bandwidth is set to a smaller value of 0.5, meaning that smaller number of control cases is used in the calculation of the counterfactual outcome. *: Significant at 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

Event window	**Specification 1**		**Specification 3**		**Specification 3**	
	Control	**Minority**	**Control**	**Minority**	**Control**	**Minority**
	ATT	**ATT**	**ATT**	**ATT**	**ATT**	**ATT**
one year	-0.0487678	0.0782937	-0.0576896	0.0962735	-0.0426278	0.0909323
two year	-0.1158204	0.0143798	-0.1270833	0.0259559	-0.1187318	0.0236602
three year	-0.3369824 *	-0.0250731	-0.368764 *	-0.0085425	-0.3464006 *	-0.0387614
four year	-0.3671314 *	-0.2925756	-0.395998 *	-0.2872536	-0.3752591 *	-0.2897118
five year	-0.6675326 *	-0.6105304 *	-0.6703053 *	-0.6256434 *	-0.6148346 *	-0.6241567 *

3.5.2.5. Acquisitions occurred in current merger wave

Finally, we examine whether the effects of acquisitions in the current wave of mergers is different to those in the previous wave. Accordingly, the full sample is partitioned into two waves: one starting from 2003 onwards and the other is the period before 2003 and dating back to 1990. Previous studies may divide merger waves differently. For instance, Barber and Lyon (1997) separate waves upon decades, or Agrawal et al. (1992) form a wave every five years. This essay examines the two waves by using a break in the year 2003 for two reasons. First, Figure 1 shows the trend of M&A in this context, and it shows a two-wave pattern which breaks around 2003. Secondly, 2003 is when the current takeover wave starts to pick up along with gradual recovery after the Asia financial crisis (Martynova and Renneborg, 2009). In this period, several governments in emerging countries such as India and China started to change their policies towards integration and liberalization. Finally, dividing into more than two waves dramatically reduces the number of events in each wave, which therefore makes the estimations of ATT inefficient. Table 3.13 reports the result.

Table 3.13 shows the wealth effects of acquisitions which occurred in each merger wave. The effects documented are similar to results reported for the full sample (Table 3.8). In the previous wave, M&A has significant and consistent negative impacts on an acquirers performance three, four, and five years after the acquisitions. Unexpectedly, the negative effects are also documented in the current wave where the acquirer, on average, underperforms four and five years after the completion date. The evidence

suggests that welcome changes in policies and business environment, to a certain extent, benefit acquirers in emerging countries since the level of underperformance in the current period is consistently lower than that of the previous wave (in the setting of the four and five year event windows). However, such a positive influence is incapable of overthrowing the value destroying nature of M&A in emerging markets.

Table 3.13: Wealth effects in current merger wave

ATT: average treatment effects on the treated (i.e. wealth effect). Specification 1: Default setting of local linear regression technique in psmatch2 where no trimming is made and bandwidth is set to 0.8 Specification 2: 5% of the treated cases are trimmed to drop cases in the off-support region. Specification 3: The bandwidth is set to a smaller value of 0.5, meaning that a smaller number of control cases is used in the calculation of the counterfactual outcome. *: Significant at 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

Event window	**Specification 1**		**Specification 3**		**Specification 3**	
	After 2003	**Before 2003**	**After 2003**	**Before 2003**	**After 2003**	**Before 2003**
	ATT	**ATT**	**ATT**	**ATT**	**ATT**	**ATT**
one year	-0.0191734	-0.0033615	-0.0213521	-0.0006645	-0.0167777	0.0219962
two year	-0.0779626	-0.0901399	-0.0867016	-0.1092002	-0.0882433	-0.0873666
three year	-0.2481173	-0.3129033 *	-0.2843859	-0.3512752 *	-0.2702902	-0.3359067 *
four year	-0.341759 *	-0.4540894 *	-0.3790317 *	-0.5225648 *	-0.3663556 *	-0.4589173 *
five year	-0.608784 *	-0.7514457 *	-0.6363323 *	-0.8739262 *	-0.5980386 *	-0.736625 *

3.6. Summary

This paper examines the impacts of mergers and acquisitions on the long-run performance of acquiring firms in emerging countries when they acquire targets in the developed world. We address two issues: (1) the lack of evidence about long-term effects for these particular groups of acquirer and target, and (2) the methodological problem that plagues a number of long-run studies in the literature. We contribute to the literature by arguing that the wealth effects in emerging countries are different from what has been widely documented in the developed world. Special characteristics on a firm level and a distinctive institutional framework in these countries can change the behaviours of traditional factors which influence the wealth effects. We also make a contribution in methodology. This paper uses propensity score matching framework in tandem with difference-in-differences technique to generate a counterfactual outcome for each acquiring firm. Within this contemporaneous method, the measure of average abnormal returns is less vulnerable to selections on observable and, to a certain extent, unobservable characteristics.

Using a sample comprising a wide range of variables from 281 acquiring firms and more than 35,000 control firms in emerging markets, we show that the acquirer in emerging countries significantly underperforms after three, four and five years from the completion of the acquisition on average. Moreover, the level of underperformance appears to increase with the length of the event windows. Further analysis on subsamples indicates that previous experience in developed countries, paying by cash,

and to some extent policies reform in emerging countries in the current merger wave fails to yield positive impacts on the acquirers performance. To our surprise, we find that gaining control via acquisition appears to destroy more value than the acquisition of a minority interest. These findings suggest a remarkable nature of value destruction when emerging-markets bidders acquire firms in the developed world. Several influential factors which presumably have a positive impact on the acquirers wealth are unable to dominate the value destroying effects of the merger event.

In summary, this part of the thesis documents evidence of the strong and negative effects of M&A on an acquirers long-run performance. It also casts some light on the determinants of wealth effects *on an average level*. However, due to the design of the study, we could only examine the effects of binary variables and were unable to examine the effects of other continuous firm-specific and deal-specific variables. Therefore, the next part of the thesis will use a different method to address these shortcomings.

Chapter 4: On the determinants of long-run abnormal return in emerging markets

4.1. Introduction

This chapter is essentially an extension of the wealth effects examinations in the previous chapter where we shed some light on the effects of several binary factors (such as acquisition for control, method of payment, and industry relatedness) on average wealth effects. In this chapter, we further examine the determinants of a long-run abnormal return on a firm level. This research design can accommodate both categorical and continuous variables.

It is not surprising that this issue has been studied extensively in the literature[31]. However, the empirical evidence from emerging countries is rather limited, perhaps due to data unavailability and the contemporary nature of cross-border M&A activities in emerging countries. In addition, most of the previous studies examine the determinants of short-run (e.g. Asquith et al., 1983) instead of long-run return abnormality, thereby leaving a significant gap for this paper to fill in.

On the determinants of wealth effects, the signs and magnitude of traditional variables may differ in emerging markets for corporate control. The previous chapter shows strong evidence of the value destroying effects of mergers on a bidders wealth. Evidence of a high level of underperformance after three, four and five years signals

[31] *Jensen and Ruback, 1983; Agrawal and Jaffe, 2000; Bruner, 2004; and Martynova and Renneboog, 2011.*

serious agency or hubris problems. Therefore several variables such as size, market-to-book and level of cash may have strong effects on the abnormal return.

We also argue in the discussion of acquisition motive that emerging-market acquirers may possess a different set of ownership advantages such as the ability to facilitate mass production with a cheap labour force (Guillen and Garcia-Canas, 2009). They are also characterized by different ownership structures (Kim, 2000; Bhaumik, 2010). As a result, the pattern of the value creation of bidders in these countries might differ from that of developed-market bidders in that bidders can use advanced technology to leverage their existing advantage in size and scale (Seth et al., 2000; Eun et al., 1996). Therefore, large size may be beneficial since quality resources in developed markets may generate a greater economy scale for a large firm than for small firms.

We undertake this investigation on the basis of 281 merger events in emerging countries in the 1990 -2010 period. With respect to methodology, we estimate the long-run abnormal return of individual acquirers using the same method to that of the first essay (i.e. a combination of propensity score matching model and difference-in-differences technique). The estimated abnormal return then serves as a dependent variable in the cross sectional investigation that accommodates deal-, firm-, industry- and country-specific independent variables. To increase the robustness of the final results, a long-run abnormal return is estimated in two matching methods including nearest neighbor matching and kernel-based matching. This type of methodological framework is arguably able to address the loophole in using a single-index model in a

long-run study as it is only capable of controlling for selections on some observables and, to a certain extent, selections on unobservables (Girma et al., 2006; Blundell and Costa-Dias, 2000).

As for the results, this paper documents that an acquirer with a high market-to-book ratio (glamour bidder) and acquirers with large cash holdings (compared to total assets) underperform in the long run. These findings are consistent with the hubris hypothesis and agency theory since managers of "glamour" acquirers tend to be overconfident[32] and managers with more cash at their discretion are more likely to waste firms resources on unprofitable projects[33], thereby leading to the potential destruction of the firms value.

In addition, this paper provides mild evidence of the positive impacts of several factors on firm-level abnormal returns such as cash payment, bidders previous CBA experience and the acquisition of majority control. We also document interesting findings that show that acquiring firms in the same industry has a negative impact, but this impact appears to rapidly decrease overtime. This evidence suggests that markets for corporate control in emerging countries were in an infant stage but have a rapid pace of development. Finally, the most interesting piece of evidence is the consistently strong and positive impacts of size on abnormal returns. Although this finding is in contrast with the hubris hypothesis (Roll, 1986), it is consistent with reverse internalization theories (Seth et al., 2000; Eun et al., 1996).

[32] *Rau and Vermalen (1997)*
[33] *Jensen (1986)*

4.2. Determinants of return abnormality

4.2.1. Relative size

The relative size of a bidder compared with the target is a potential determinant of the bidders abnormal return. Asquith et al. (1983) find that a bidders abnormal return is positive and significantly higher when relative size is taken into consideration. More specifically, a bidders abnormal return increases significantly from 1.7 to 4.1% when a relatively large target is acquired. Asquith and his colleagues emphasize the impact of this variable on the wealth effect. They argue that previous studies were unable to capture a large market reaction because they failed to account for size difference. Their reasoning is that when acquiring a smaller target, even if the net present value (NPV) is relatively large compared to the size of the target firm, this NPV may be small for a large bidder. As a result, the ratio of dollar gain from the acquisition is relatively trivial to the bidder, thus resulting in a positive but mild impact on the bidders stock performance. This minor impact can then easily disappear in the noise of the bidders stock return. Therefore mergers may have positive impacts on an abnormal return when relative size is controlled for.

As relative size is a potential determinant of abnormal return, the stand-alone firm sizes of the bidder and target are also relevant determinants.

4.2.2. Acquirer size

The acquirer size effects are defined as *"the difference between the abnormal returns of small and large acquirers" (*Moeller et al., 2004). Moeller and his colleagues find robust evidence of significant bidder size effects on announcement returns. After controlling for a wide variety of firm and deal characteristics, the size effects remain statistically significant at a 99% interval in all of their regressions. This evidence suggests that on average small acquirers have a better performance than large acquirers. The reason for this is that managers in large firms have either succeeded in increasing the firm size over the years or have overcome more obstacles to become managers of a large corporation than in the case of the small firms managers. Moreover, large firms' stocks are more likely to be overvalued. Moeller et al. (2004) observe that a large firm has a higher market-to-book and Tobin's q ratio than those of small firms, while these ratios are often used as proxies of overvaluation (as in Dong et. al., 2002; Rau and Vermaelen, 1997). Therefore overconfidence might arise from a high managerial status in a large corporation or from the appreciation of the market towards the large firms stocks. As a result mangers of large firms are more likely to overpay, thereby resulting in negative impacts on the ex-post performance.

The size effect can also be explained by agency theory. Firstly, the incentives of managers in small firms are better aligned with those of shareholders since they often hold a larger portion of the outstanding shares[34]. Secondly, large firms are more likely to be further along their life cycle, where opportunities for growth gradually deplete.

[34] *Demsetz and Lehn (1985) find the management ownership ratio is higher in small firms than in large firms.*

Meanwhile, managers in large firms have more resources at their discretion. A combination of readily available resources and a lack of investment opportunities is a formula of the agency cost of free cash flow (Jensen, 1986). In brief, large firms are more vulnerable to agency and hubris problems than small firms.

It is important to note that according to the above reasoning the severity of agency and hubris problems is dependent on firm size and is independent of merger events. It is therefore natural to witness a downward adjustment of a large firms' stock return along the time horizon, regardless of whether the acquisition takes place or not. However, when large firms announce merger events the market may interpret this news as though organic investment opportunity within the firm is exhausted, and managers have no other way but to expand externally. Running short of investment opportunities, in turn, is a sign of diminishing management quality (Bhagat et al., 2011). As a result the merger announcement may trigger the revaluation attempt of market investors and draw their attention to the hubris and agency problems of large corporations, thus causing a further decline in stock performance.

In brief, the literature suggests that large size combined with a merger announcement may have strong negative impacts on firm performance. In other words, there is a potentially positive relationship between bidder size and the ex-post performance of the firm.

However, in the emerging markets the bidder size effects may manifest differently. Regarding the agency problems, bidders in these countries are not short of investment

opportunities as they are still in the early stage of development. In fact, Kale (2004) argues that there are many "low hanging fruits" opportunities for them in local markets. Moreover, a high proportion of bidders in these markets are family firms with a significant incentive alignment (Bhaumik et al., 2010). Nonetheless, Kim (2000) argues that a number of state-owned bidders in emerging economies operate in an environment of efficient corporate governance. As a result managers of large bidders can use excessive resources on unprofitable acquisitions without being disciplined for post-acquisition failure. Under these circumstances large bidder size may be associated with underperformance after the acquisition.

4.2.3. Target size and deal value

In an early study, Roll (1986) presents a hubris problem that states a bidder can overpay in an acquisition, not because of any managerial motive but because they make mistakes in estimating the targets firms value[35].When target size is sufficiently large, overpayment is less likely because bidders are generally more careful in the evaluation of a large target. Large targets also attract less rivalry, which is a great benefit since the bidder can avoid paying an extravagant premium in a contested bid. Finally, a general feature of dispersed ownership in a large target may undermine the bargaining power of shareholders, thus making them less reluctant to accept a low premium for their shares (Roll, 1986). Therefore, acquiring a large target may entail lower transaction costs.

[35] *The hubris problem has been clarified in a previous chapter.*

In contrast to Roll (1986), Bayazitova et al. (2009) argue that very large mergers are more likely to be inflicted by hubris than small mergers. They find short-term negative average abnormal returns of 3.2% in mega-mergers and positive 1.7% returns for non-mega-mergers. A plausible explanation for such a discrepancy is that even if more efforts are spent on the evaluation of a large deal, these efforts might not be sufficient to cover for the many more things that can go wrong in a mega deal[36]. Furthermore, large deal size ignites the managerial motive of the acquirers managers because the commission and reputation awarded afterwards is positively correlated with the deal size (Maris, 1964). As a result, these managers are more willing to pay a high premium to the target shareholders.

Hubris and agency problems relating to target size in emerging markets may be different to such issues in a developed country. Acquiring a large target may prove inefficient for emerging market firms because a large stock of quality assets in developed markets requires a strong absorptive capacity from the acquirer. Indeed, we found in the previous chapter that the acquirers in this context are less likely to aim at a large developed firm as it prevents them from quickly accessing quality resources. In addition, a large target may be associated with the managerial motives of state-owned bidders in emerging countries. Therefore we expect a negative relationship between target size and acquirer performance.

[36] *The top 1% of mergers in absolute transaction value (Bayazitova et al., 2009).*

4.2.4. Market-to-book value

Rau and Vermaelen (1997) consider firms with a recent good performance as "glamour firms". Glamour firms, by their definition, have a high market-to-book ratio and significant growth opportunities, while "value firms" have a low market-to-book ratio. Rau and Vermaelen find that being a glamour or value bidder even has significant impacts on a bidders abnormal returns in the long run. Using the market-to-book ratio as a proxy for glamour or value status, they find that the value acquirers abnormal return after adjusting for size and market-to-book ratio is 26% on average, whilst the same figure for glamour acquirers is -57% three years after the completion of the merger. In addition, when examining the stock price premium they also find that glamour bidders tend to pay a higher premium for a targets stock than value bidders. The remarkable difference in abnormal returns was attributed to the overpayment, which is a result of management overconfidence in their ability to manage the acquisition to success. This high level of confidence is perhaps the result of a performance record that has been appreciated by the stock markets. Indeed, Roll (1986) argues that the hubris level is expected to rise for firms that have a good track record before the acquisition.

"…One would expect a higher level of hubris and thus more aggressive pursuit of a target in firms that had experienced recent good times…" Roll (1986 p. 206).

Therefore, a higher glamour status (i.e. higher market-to-book ratio) of the acquiring firm may accompany a greater magnitude of hubris, which eventually leads to lower abnormal returns.

4.2.5. Acquirers cash holding

Bidders with large cash holding are more likely to destroy value in mergers and acquisitions as large cash reserves might fuel the managerial and hubris motives of the bidders management. Harford (1999) examines acquisitions of cash-rich firms and finds that acquirers with large cash reserves tend to destroy value regardless of whether abnormal returns are measured in stock or operating performance. For every dollar of excessive cash reserve, he finds a cash-rich bidder destroys seven cents. Harford also finds that bidders with a large cash reserve tend to acquire targets which are more likely to be unattractive to other bidders[37]. Evidence of the poor performance of cash-rich bidders can be explained by Jensen's free cash flow theory. This theory of merger predicts that excessive cash flow and poor investment opportunities lead managers to make unprofitable acquisitions rather than paying out dividends to shareholders (Jensen, 1986). Also, a large amount of cash at disposal can further tempt a manager's empire building motive as excessive cash can be used as a cheap cost of capital.

However, the effects of a large cash holding can be puzzling in an empirical study as on average small firms have a higher ratio of cash over their size, while the agency cost of

[37] *Diversification can be considered as a value maximizing motive since merging with a low correlated target can reduce an acquirers risk, thus making borrowing or issuing corporate bonds less expensive (Bhagat et al. 2011). However, this financial benefit is less likely to be adequate compensation for the harm associated with acquiring unattractive firms.*

free cash flow is arguably lower for smaller firms. This issue requires the examination of the cash effects on abnormal returns to control for firm size. Therefore we use cash over the total assets ratio as a proxy for a firms level of cash.

4.2.6. Targets public status

Acquisition of public targets and private targets may have different wealth effects. Chang (1998) finds that a significant bidders abnormal return is pertinent to a combination of stock-financed deals and private targets, whereas cash-financed acquisitions of private targets fail to create abnormal returns. Fuller et al. (2002) find similar evidence that bidders still manage to achieve wealth gains in the acquisitions of private targets, even when paying by stock. Chang (1998) uses *monitoring hypothesis* to explain his results. He argued that a small number of owners in the ex-ante target become ex-post blockholders[38]. These blockholders may serve as effective monitors of managerial performance, thereby mitigating information asymmetries. Meanwhile, Fuller et al. (2002) attribute positive wealth effects to the discount of illiquidity assets. They argue that the market for private firms is not as liquid as the market for public firms. As a result, bidders are compensated with an illiquidity discount which outweighs the negative effects of the stock payment. Recently, Bhagat et al. (2011) used the free-rider hypothesis to explain the potential gains from acquiring private firms. This hypothesis is essentially the combination of Chang and Fuller's arguments. Bhagat and colleagues hypothesize that any shareholder who refuses to tender their shares to an acquirer can make the same profit from price appreciation after the acquirers gain

[38] *As private firms are usually owned by a small number of shareholders.*

control of the target firm. Target shareholders of the listed firms have bargaining power over the acquirer since they anticipate a price appreciation from holding out with their shares (Grossman and Hart, 1980). Meanwhile, the free-rider problems in private firms are negligible due to greater constraints in liquidity. Blockholders are less likely to be able to take advantage of an ex-post price appreciation due to the private status. Therefore, a private firms blockholders have less bargaining power compared to a listed targets shareholders. Consequently, they might be more willing to accept a lower bid price from the acquiring firm

These findings are interesting since they demonstrate that the effect of a targets public status can overwhelm the negative effects of a stock payment. Nonetheless, acquiring private firms may entail significant risks because the information of private firms is limited and less reliable than public firms. Indeed, Bradley and Sudaram (2004) show that the acquisition of private firms leads to a decline in the wealth effect. Therefore the literature seems inconclusive about the effect of a targets public status on abnormal returns.

4.2.7. Acquirers attitude

An acquirers attitude can be hostile, neutral or friendly[39]. Empirical evidence in the literature shows mixed findings about the effects of a hostile attitude on the bidders wealth. On the one hand, hostile takeovers are often associated with value destruction rather than value creation (Gregory, 1997 Frank and Mayer, 1996; Goergen and

[39] *Franks and Mayer (1996, p. 165) define a hostile bid as "one in which the first offer is opposed by the incumbent management," but the target is eventually acquired in the later revised bid.*

Renneboog, 2004). Goergen and Renneboog (2002; 2004) find that a hostile takeover triggers significant negative abnormal returns (-2.5%) around the announcement date. Gregory (1997) finds the bidders return to be negative but not significant in hostile takeovers. The evidence of a negative consequence of hostile takeovers has been highlighted in the literature, as hostile takeovers "*are exceedingly bad for the economy,*" or a "*tremendously expensive and imprecise solution,*" or *"hostile takeovers destroy valuable corporate cultures"* Frank and Mayer (1996). The reason for this is that hostile bidders often expect large gains from the acquisitions so they are willing to pay a high premium for the targets stocks. Frank and Mayer (1996) show evidence of large assets disposals and high bid premiums in hostile bids. Moreover, paying a high premium in a revised bid may be interpreted as a reflection of the hubris and agency related motives of management, which explains the *ex post* negative reaction of market investors.

On the other hand, hostile bids can result in positive abnormal returns. Sudarsanam et al. (1996) studied announcement returns of UK bidders in the 1980-90 period and found that hostility exhibits a significantly positive coefficient. Higson and Elliott (1993) also found that UK hostile bids produce greater announcement returns than friendly bids. These evidences of positive abnormal returns are consistent with the *market for corporate control hypothesis* which posits that takeovers benefit the targets shareholders by punishing the underperforming incumbent management. In short, the above two different perspectives ensure that the arguments regarding deal attitude's effects remain controversial.

4.2.8. Macroeconomics variables

Macroeconomics variables may offer an important explanation for the effects of mergers and acquisitions on an acquirers wealth. Kiymaz (2004) found the targets GNP to be highly significant but a negative determinant of the bidders abnormal return. Kiymaz argues that countries with favourable economic conditions are more likely to be destinations of an expansion strategy, but US bidders might be too optimistic about the potential of transactions in such countries. His finding is consistent with the hubris hypothesis, in that an over optimistic attitude should lead to over payment, and this will eventually lead to a significant wealth transfer from the bidder to the target shareholders in the form of high premiums. As a result, target countries with good economic prospects might be a trap for the bidding firm.

Other researchers argue instead that acquiring targets in more developed countries can have positive impacts on a bidders wealth. In fact, the bootstrapping hypothesis posits that the *"acquirer voluntarily bootstraps itself to the higher governance standards of the target-resulting in a positive valuation impact for the acquirer"* (Bhagat et al., 2011; Martynova and Renneboog, 2008; Khanna and Palepu, 2004). Accordingly, if the difference in GDP can to some extent represent the differences in the corporate governance standard then this difference should be positively correlated with the bidders abnormal returns.

In addition, Ali-Yrkko (2002) documents a positive and significant correlation between GDP and the number of M&A transactions within a country. This finding implies that

countries with a high GDP level also have a more active market for corporate control. If the bidders are located in more active M&A markets they would have more takeover experience, and thus would perform better in cross-border acquisitions than those in less active markets (Danbolt, 1995). In fact, Danbolt find that US acquirers perform better than ones based in Continental Europe, and this empirical evidence lends direct support to his hypothesis. Therefore a high GDP level of a bidding country is associated with the takeover experience of firms in the market and has positive impacts on a firms performance once it engages in cross-border acquisitions.

Moreover, the level of development of a bidders country may determine the bidders abnormal return. In a recent study, Hope et al. (2011) found that on average bidders from developing countries pay a higher premium to acquire assets in developed countries compared to acquirers from developed countries. The remarkable difference in the premiums paid by developing and developed countries bidders is attributed to "national pride". National pride sentiments appear to occur when developing country bidders acquire targets in developed countries. Meanwhile, such sentiments are less likely to arise when acquisitions occur in developing countries (Hope et al., 2011). In line with this study, it is therefore plausible to hypothesize that the level of development of a country drives the magnitude of national pride sentiments, and this eventually affects the premium paid to target firms. Hubris problems associated with national pride sentiments are possibly less severe for bidders in countries with a higher level of development, and therefore bidders in these countries are less likely to overpay for targets. In brief, the level of development of target and acquirer countries can partly

capture the impacts of macroeconomics factors, the behaviour of bidders on a country level, and the technology gap in the acquirers wealth.

Finally, the literature has documented a high correlation between national income level and technological innovation (Comin and Hobijin, 2004; Caselli and Coleman, 2001). Generally speaking there has been a huge technology gap between developed and developing countries. Unsurprisingly, Tao (2010) documents that 84% of scientific and innovative outputs belong to high-income countries. However, he also notes that the rapid pace of economic development has led to the employment of world-class technology of certain sectors in the urban areas of advanced emerging countries (such as China and India). Therefore, despite the huge technology gap on an aggregate level, the variation of the gap between an emerging and a developed country could range from a huge difference to a close distance. Meanwhile, technology gap has been documented as an important determinant of a bidders abnormal returns. A large gap negatively affects the absorptive capacity of the bidder when they acquirer the targets technology. In order to achieve successful integration, the bidders absorptive capacity needs to pass a certain threshold level. Therefore the difference in national income might be a close representative of the technology gap, so a large difference should have negative impacts on the bidders wealth.

In summary, the literature has shown various deal–specific and firm-specific determinants of a bidders abnormal returns. These variables represent two major theories of mergers and acquisitions: (1) variation of bidders abnormal returns is

dependent on the revaluations of the firms stand-alone value, and (2) abnormal returns are driven by hubris, managerial motives and weak corporate governance. In the context of this study, where acquirers are from emerging markets and targets are in developed markets, the theory associated with the revaluation of stand-alone firm value appears to have weaker explanatory power on the variation of abnormal returns than the hubris and managerial motives theory. Firstly, the revaluation upon deal announcement is dependent on the rationality of investors in the markets. In developed markets, investors are often more knowledgeable and rational than their counterparts in developing countries. As a result they might interpret a bidders signals more rationally. In contrast to this, investor behaviour in developing markets is less rational, especially when bidders in developing markets announce acquisition transactions with a famous target in developed countries. Under such circumstances, investors often react positively without thoughtful consideration of the bidders signals, terms of the deal and the targets details. Such behaviors are common as investors in developing markets are prone to "prestige factor". Acquisitions of a great brand in developed countries may exert "national pride"[40] and thus underpin the optimistic behaviour of the investors. As a result the lack of rationality of bidders in developing countries can eliminate the effects of the revaluation attempts of a small number of rational investors in the market.

On the other hand, the effects of hubris and managerial motives on the wealth effects of emerging market bidders are greater, particularly when targets are in different

[40] *Hope et al. (2011)*

countries, and the effects get even stronger if the target is in developed markets. In cross-border acquisitions, bidders are even more vulnerable to hubris problems since they face an extra set of issues such as the legal system (La Porta et al. 2000, 2002), tax liability (Norback et al. 2009), exchange rate (Georgopoulos, 2008), accounting system, and governance and cultural discrepancies. Furthermore, the prospect of expanding abroad into developed countries is attractive bait for the managerial motives of managers in developing countries. Finally, the previous chapter provides evidence of the average underperformance of acquirers in emerging markets in the acquisition of developed-market firms. The consistent and strong evidence of underperformance in the long run suggests the dominance of the value-destroying factors (including agency and hubris problem) as drivers of abnormal return. Therefore, hubris and managerial motives seem to be prime contributors to the variation of the bidders abnormal returns in this study.

The M&A literature documents a variety of factors that affect the abnormal return of acquiring firms. For instance, firm size (Moeller et al., 2004; Asquith et al., 1983; Demsetz and Lehn, 1985), market-to-book ratio (Rau and Vermaelen, 1997) and cash holdings (Jensen, 1986) often cause negative effects, while the private status of the target firm often exhibits a positive impact (Chang, 1998; Bhagat et al., 2011). The empirical effects of these variables are commonly attributed to several fundamental theories such as agency, free cash flow, hubris or free-rider theories. Specifically, agency and free cash flow theory can be used to explain for the negative effect of the firm size or amount of cash at the discretion of the firms mangers. The hubris hypothesis can be used to explain the negative effects of the market-to-book ratio, which represents the level of the manager's overconfidence. Additionally, the free-rider theory is able to explain the positive effects of the targets private status (Bhagat et al., 2011).

In chapter two of this thesis, we find evidence supporting a hypothesis that acquirers in emerging countries are motivated by the strategic assets of developed-market firms. They aim at small firms with relatively low stock of intangibles in order to quickly gain access to high quality resources in advanced economies. As a result, a potentially positive causal relationship between the targets strategic assets and long term abnormal returns may exist. However, we find in chapter three consistent and strong evidence of the acquirers long-term underperformance. Therefore, the presumably positive impact of the targets intangible assets appears to be dominated by the negative impacts of other characteristics. Accordingly, potential firm-level proxies for agency-

related and hubris problems such as size, market-to-book and level of cash holding are likely to be the key determinants[41].

Along with these variables, the previous chapter suggests additional control for several deal-specific characteristics such as relatedness, previous experience, acquisition for control and method of payment. We also advocate further control for bid attitude (i.e. friendly or unfriendly bid), and the targets competitiveness and macroeconomic factors that represent the differences in the technology level. The latter two need attention since our sample consists of firm-level data across countries and industries.

The following section presents the theoretical predictions and empirical evidence of these variables.

4.3. Methodology and data

4.3.1. Method

In this paper, we argue that a precise measure of the long-run abnormal return (dependent variable) is the most important factor, since data of potential independent variables such as size, market to book ratio or cash holdings are standardized and consistent. We have shown that a combination of propensity score matching and

[41] *We are aware of the need to take the targets technology into consideration for our empirical analysis. However, the design of the data and methodology in this essay is different from that in the previous chapter about acquisition motive. As a result the attempt to match two datasets to collect information about the targets technology (research and development expense) results in a very small sample. Therefore we have no choice but to drop this variable.*

difference-in-differences technique is superior to the methods used in earlier studies. The combined methods yield an estimate of abnormal return that is less vulnerable to selection on observables and un-observables. In the previous chapter, we calculated the average of abnormal return estimates to examine the overall wealth effects of merger events. However, in this chapter, we use firm-level abnormal return as dependent variables for an investigation of the determinants of abnormal returns.

In order to examine this issue we use a linear robust regression and an outlier robust regression method. The robust choice is used in the former method because it deals with the heteroskedasticity problem in cross-sectional investigations (White, 1980). The latter model has the advantage of mitigating the impacts of extreme value in the estimated abnormal returns (Blundell and Costa Dias, 2000; Girma et al., 2007). This feature is important for examinations in emerging countries since the outliers are prevalent to stock data, and this problem is likely to get worse in highly volatile markets like emerging ones (Coutt et al., 1994).

In essence, we perform an empirical analysis on the basis of following equation

$$DIDs = F(deal - specific, firm - specific, macro\ variable, time\ dummies)$$

$$DIDs = \left(Y_{1t_1 i} - Y_{1t_0 i}\right) - \sum_{j \in C}^{n_2} W(i,j)(Y_{0t_1 j} - Y_{0t_0 j})$$

Where

$DIDs$: difference-in-differences estimate of firm-level abnormal return

$\left(Y_{1t_1i} - Y_{1t_0i}\right)$: return growth rate of the acquirer

$\sum_{j\in C}^{n_2} W(i,j)(Y_{0t_1j} - Y_{0t_0j})$: counterfactual growth rate

$deal - specific$: relatedness, payment, control, experience, attitude, target status, deal value, and targets herfindahl index.

$firm - specific$: size, market-to-book, cash ratio

$macro\ variable$: difference in gdp between target and bidder country

4.3.2. Data

This chapter is essentially an extension of chapter three. In this chapter we analyze the determinants of long-run abnormal returns upon the same sample. Therefore the description of the data regarding distributions of sample by year, country and category is the same as in the previous chapter. However, we present the descriptive statistics of the bidders characteristics and the bidders long term abnormal return in an additional table since these variables are used to find the determinants of wealth effects.

Table 4.1: Descriptive statistics of bidders characteristics

DIDs1 to DIDs5 represent the long-run abnormal return of an individual bidder. Size is measured by the market value of the bidder, cash ratio by the cash amount over total assets. Relatedness, payment, control, experience, and target status are dummy variables. The definitions of these variables are explained in the previous chapter. Gdpdiff reports the difference in gdp between the target and bidder country, while target hi shows the herfindahl index of the target industry.

Variable	Mean	Median	Standard deviation
size	6.103	6.046	1.907
mtbv	3.479	2.170	4.901
cashratio	0.160	0.114	0.148
relatedness	0.448	0.000	0.498
payment	0.594	1.000	0.492
control	0.725	1.000	0.447
experience	0.324	0.000	0.469
attitude	0.943	1.000	0.232
target status	0.281	0.000	0.450
dealvalue	250.2	20.0	1219.7
gdpdiff	24.320	36.120	51.480
target hi	0.168	0.077	0.198
DIDs1	-0.011	-0.158	0.827
DIDs2	-0.076	-0.426	1.243
DIDs3	-0.264	-0.686	1.374
DIDs4	-0.378	-0.973	1.645
DIDs5	-0.672	-1.422	2.199
N=281			

This table reports the descriptive statistics of bidders. There are 281 observations used for the robust linear regression and outlier robust regression. The descriptive statistics of abnormal return shows a consistent pattern to the empirical evidence in the previous chapter. The mean abnormal return of all event windows is negative, which indicates the underperformance of the bidding firm. This underperformance increases rapidly with the length of the event window, which is in line with our argument in an earlier chapter about the value destruction nature of merger events in this context. The standard deviation of abnormal return also increases with the number of years in the event window, perhaps because of the high level of volatility in emerging stock markets.

4.4. Results and discussions

Table 4.2 and Table 4.3 present empirical results of robust regression and outlier robust regression. Each table contains two panels: Panel A shows the parameters and t-stastistics of the Robust OLS regression, and Panel B reports the same figures of the Outlier Robust Regression. Two regression methods are mixed with five event windows to create various settings for empirical analysis. These results shed more light on the relationship between the estimated long run abnormal returns and firm-, deal-, industry-, and country-level characteristics.

4.4.1. The impact of bidder size

Regarding size effects, bidders size appears to be the most consistently positive and significant determinant of abnormal return. When abnormal return is estimated in the kernel-based matching and DIDs (Table 4.2), panel A shows the significant impact of size on the two-year and four-year abnormal return. In addition, the significant size impact is also documented in the one-, two-, and three-year abnormal returns in panel B. The size parameters in Table 4.2 range from 0.071 (one-year abnormal return in panel B) to 0.229 (four-year abnormal return in panel A), which means that one unit increases in size (measured by the natural log of the bidders market value) results in a significant increase of abnormal return by 7.1% (one year after the event) or by 22.9% (four years after the event). Similar impacts of size on abnormal return can also be observed in Table 4.3, where abnormal returns are estimated on the basis of nearest neighbor matching and DIDs. Panel A shows the significant impact of size on the two-year and

four-year abnormal return while panel B documents significant size effects on the one- and two-year abnormal return.

The strong evidence of statistical significance and remarkable magnitude of size effects across various settings of the event window and regression method is surprisingly contrary to my prior expectation. In finance literature, bidders size has regularly been used as a proxy for managerial hubris, since (1) Smaller firms have a better incentive alignment (Demsetz and Lehn, 1985), (2) Managers in larger firms are more likely to be overconfident (Moeller et al., 2004), and (3) Large firms' investment opportunities are often depleted as they are further along the business cycle (Moeller et al., 2004). As a result the finance literature shows a tendency of overpayment when bidder size is large, meaning large size should have negative effects on the bidders abnormal return.

However, according to a different branch of literature, the ownership advantages paradigm (Dunning, 2008; Dunning, 2000), the acquired assets from developed countries might have stronger leverage effects for larger bidders. For instance, the acquirer can use the brand image of the acquired firm for their current product range, thus allowing them to extract more rent from their current production. Therefore the larger current production scale can be levered by the acquired assets for greater benefit. Alternatively, the acquirer may adopt the targets management skills in developed countries in order to streamline their own management system and improve efficiency. In this case, more complex organization might benefit more from the targets management capability. Therefore, this branch of literature lends support to the

empirical findings of this study about the effects of size on the bidders abnormal return in that the scale economies generated from utilizing acquired assets might be greater with larger acquirers.

4.4.2. Market-to-book ratio

The results also show evidence of significant impacts of Market-to-book ratio (MTB) on bidders abnormal return, mostly in robust OLS regression. MTB statistics in panel A of Table 4.2 indicate significant negative impacts of MTB on two, three, four and five year abnormal returns. The coefficient ranges from -1.7% to -7%, and the impact appears to escalate over the time horizon of the event window. A similar pattern is documented in panel A of Table 4.3, where two, three and four year abnormal returns are significantly affected by the MTB ratio. The magnitude of negative effect also seems to increase along with the width of the event window, from -3.1% to -3.6% and -4.6% in the two, three and four year event windows respectively. Panel B of Table 4.3 adds more evidence of the significant negative impact of MTB ratio on the four-year abnormal return. The coefficients of MTB in Tables 4.2 and 4.3 appear to be smaller than the respective size's coefficients in many settings. While this might suggest that the size effect is stronger than the MTB effect, it is not possible to draw such a conclusion under this circumstance since both size and MTB are not standardized as a unit of measurement.

This finding is in line with Rau and Vermaelen (1997). Rau and Vermaelen found evidence of the significant long-term underperformance of "glamour bidders," while

"value bidders" significantly outperform the control portfolio of peers with the same size and MTB ratio. More specifically, they examined the performance of bidders three years after the completion date of the merger event. They found that on average the glamour bidder earns a negative return of -57% after three years when compared with other bidders. They also find that glamour bidders performed worse than value bidders in every setting.

This finding is also consistent with the proposition advocated by Jensen (2003). Jensen believes that overvalued equity is *managerial heroin* since it may make the managers feel good in the short run but can destroy them and their firm before long. The reason for this is that overvalued equity can boost a manager's confidence, but "*if equity is overvalued, by definition, the manager will not, except by pure luck, be able to deliver the performance the market requires to justify that valuation" (Jensen, 2003, p.552).* The pressure to meet market expectation, plus the fact that overvalued equity can be used as cheap currency for acquisitions, is likely to push managers into making poor acquisition decisions, thereby destroying the firms value.

4.4.3. Deal value

Deal value or transaction size is measured by the dollar value of shares acquired from target firms in the M&A transaction. Panel A in Table 4.2 shows significant evidence for the one, two and three-year event windows. Panel B of Table 4.2 only shows significant evidence in the two-year event window. In addition, significant impacts are also reported in Table 4.3 for the one and two-year event windows in panel A and the two-

year event window in panel B. It is noteworthy, however, that the marginal effect of the deal size is negligible in all sampling situations. This evidence is consistent with Bayazitova et al. (2009). By partitioning the sample into mega-size (top 1% of mergers in absolute transaction value) and non-mega-size deals, Bayazitova and her colleagues find a significant but negative average abnormal return of -3.2% for very large deals. Our finding suggests that large transactions are associated with empire-building and hubris motives

4.4.4. Friendly vs. Unfriendly bids

DEALATTITUDE is a dummy variable receiving the value of 1 for friendly bids and 0 for unfriendly bids. Tables 4.2 and 4.3 indicate that this variable is significant in various settings. Table 4.2 reports significant results in two settings when the dependent variable is a two-year abnormal return in the robust OLS and outlier robust regressions. In particular, Table 4.3 shows significant evidence in four different settings (three in panel B and one in panel A). In all Tables the significant results show consistently negative impacts of friendly bids on abnormal returns, which is in sharp contrast with some insights from the literature. For instance, unfriendly takeovers are often associated with value destruction rather than value creation (Gregory, 1997; Frank and Mayer, 1996). In addition, Goergen and Renneboog (2002; 2004) find that hostile takeover triggers significantly negative abnormal returns (-2.5%) around the announcement date. An explanation often referred to in order to explain the negative impacts of unfriendly takeovers is that bidders are willing to overpay for the target firm

since they expect large gains from the acquisition. An alternative explanation is that an attempt to acquire a target with a high premium in revised bids might be a sign of management hubris, thus leading to a pessimistic reaction of the market (Frank and Mayer, 1996). A hostile attitude may also trigger the defense mechanism set by the targets management, which often skyrockets the transaction costs and makes potential gains from the acquisition vanish.

As mentioned in the theoretical framework, the argument about the effects of deal attitude on firm performance remains controversial. Several studies about the UK markets find positive impacts of unfriendly bids on firm performance (Sudarsanam et al., 1996; Higson and Elliott, 1993)[42]. A plausible explanation is that the managers of target firms in developed markets often have much more experience than their counterparts in the acquiring firm. As a result the targets managers know how to negotiate and strike a deal, so the friendly and unopposed will to hand over the control rights of the targets managers might be the sign of an asymmetric information problem, where bidder is already overpaying for the target firm.

The consistent findings of negative impacts of friendly takeovers need careful interpretation however since nearly 95% of bids in the sample are friendly, making the unfriendly bids in the sample a very small figure. This data structure makes sense in the case of this study, as targets managers in developed markets are often more

[42] *The evidence of the positive impacts of unfriendly bids on acquirer performance is consistent with the Market for Corporate Control Hypothesis. Unfriendly bids might be a market mechanism for overthrowing an incumbent underperforming management team, leading to more efficient ex-post management. However, this explanation is not suitable for bidders in emerging countries since we find their motivation is not about replacing underperforming managers, as it is about their wish to quickly gain access to strategic assets.*

experienced and know how to fight back and defend themselves against hostile bids. As a result the excessive cost of engaging in unfriendly bids might overwhelm the transaction costs in friendly takeovers, thereby preventing bidders in emerging markets from pursuing unfriendly bids. Therefore, the bidders managers in emerging markets may not opt for acquisitions unless they strongly believe that the expected gains dominate the excessive transaction costs. That might explain the evidence of a positive bias toward unfriendly bids found in this study.

4.4.5. Bidders cash holding

The results in panel A and B of Table 4.3 show the significant effects of cash in the four-year event window. However, this finding needs careful consideration when drawing a more generalized conclusion since only 3 out of the 30 settings show significant statistics, and the sign of this variable is not consistent in all settings.

4.4.6. Relatedness

To examine the impact of relatedness, a dummy variable is included in the list of regressors. If the acquirer and target have the same two-digit SIC code, the dummy variable will be assigned to 1, and it is assigned to 0 otherwise. We find related acquisitions have significantly negative impacts on abnormal return, which is inconsistent with the mainstream theoretical prediction. More specifically, panels A and B in Table 4.2 show significant negative effects of relatedness on the one-year abnormal return. In addition, significant negative effects on one-year and three-year abnormal returns are also reported in Panels A and B in Table 4.3. It is noteworthy that the

magnitude of relatedness is rather remarkable. For instance, the one-year abnormal return in related acquisition is 31.8% lower than that of conglomerate acquisitions with all else being equal (Table 4.2, panel A). This figure is down to 16.6% in the outlier robust regression (Panel B Table 4.2). The negative effect of relatedness ranges from -16.6% to -47.6%. The findings therefore statistically indicate that related acquisitions yield lower abnormal returns for acquirers than conglomerate acquisitions. This evidence is consistent with Agrawal et al. (1992,) as they find that in each decade (from 1955 to 1987) the five-year post performance in the sample of related acquisitions is below that of the conglomerate sample.

This empirical evidence can be explained by a stream of Efficient Internal Capital Market models (Stein, 1997; Li and Li, 1996; Matsusaka and Nanda, 1997)[43]. These models typically suggest that diversification creates value. The argument is that expansion via diversification can form an internal capital market where the internally generated cash flow can be pooled, thus allowing the managers to optimize the allocation of the combined resources. Alternatively, this evidence might suggest that M&A activity in an emerging market, especially when targets are in developed countries, are still in the infant stage. Being in the infant stage might explain why the diversification benefits in conglomerate acquisitions still have the upper hand. As the market for corporate control matures in these countries, these effects should be reversed.

[43] *see more studies in Rajan et al. (2000)*

Our finding is in sharp contrast with Kale (2004)'s. In an investigation of M&A in India, he finds the effect of relatedness is negligible in the early stage of liberalization. In later stages, Kale finds that related acquisition creates 3.75%, while conglomerate acquisitions yield a smaller abnormal return of 1.01%. Kale' study, however, does not specifically target acquired firms in developed countries. Perhaps the discrepancy in my result and Kale's can be attributed to the difference in the mechanism of value creation when the fact that target firms located in developed countries is not taken into account.

4.4.7. Acquisitions for corporate control

Chari et al., (2008) argue that the transfer of control right from the target to the acquirer is the key determinant of positive abnormal returns. They argue that the transfer of control rights can better facilitate the technology transfer and sharing of management skills. The target firm is not willing to share their know-how unless they are forced to. The acquirer is also not willing to share their secrets if they do not have control of what has been disclosed. This "incomplete contract" problem gets even worse in emerging markets, where the international property rights have not been sufficiently enforced to the standard of developed countries (Chari et al., 2008). As a result, acquiring the majority control of the target should have positive effects on the bidders abnormal return. The finding in this study is consistent with this hypothesis. Panel B in Table 4.2 reports significant and positive effects in the three-year event window. Panel B of Table 4.3 also shows significant and positive effects on the three-

year abnormal return. The marginal effects in these three settings are also at a discernible level.

4.4.8. Acquirer with previous CBA experience

In M&A, and especially cross-border M&A, prior experience might be an invaluable asset for the bidders. The experience learnt and built up from carrying out previous deals can help acquirers reduce significant transaction costs and the cost of post-merger integration. In particular, experience in cross-border acquisitions might be linked with the capability to integrate firms in diverse cultures where the bidders and targets managers have a different nationality. Therefore previous experience might have significant impacts on the acquirers abnormal return. In this study, experienced bidders are defined as firms which have undertaken at least two acquisitions of target firms in developed markets. Unsurprisingly, significant evidence of a positive effect is reported in panel B of Table 4.2. However, the evidence is rather obscure since the effect is significant in only one setting, where the abnormal return is measured in the four-year event window.

4.4.9. Payment method

PAYMENT takes value 1 when the deal is financed by cash only, and takes value 0 otherwise. Table 4.2 (panel A) reports significant evidence in the five-year event window, while Table 4.3 (panels A and B) shows the significant effects of PAYMENT on the four-year event window. Also, the significant coefficients in three settings are

remarkable which indicates that paying by cash is associated with better performance than non-cash payment. This finding is, therefore, consistent with our expectation.

4.4.10. Targets public status

Private firms often do not have equal bargaining power as listed firms in takeovers. As a non-listed firm, private shares have liquidity constraints which prevent them from extracting free-riding benefits. In addition, private firms are often harder to value because information about them is not published. Under uncertainty about value and liquidity constrains, private firms are often cheaper than their equivalent listed firm. Buying private firms can benefit from additional monitoring as they are dominated by blockholders. Blockholders often have a sufficiently larger interest at stake than individual shareholders, and as a result are more willing to closely monitor the bidders management. Therefore it might be better for the bidder to acquire aprivate rather than a public firm.

Target status takes value 1 when the target firm is listed, and value 0 when it is private. This study finds significant evidence of this variable in several settings, suggesting that acquiring private firms in developed countries is better for the bidder than acquiring listed firms. Table 4.2 (panel B) shows negative and significant effects on the four-year abnormal return. Panel A of Table 4.3 also shows significant evidence in the four year event window. These significant effects are consistently negative and marginally discernible, which is consistent with the theoretical prediction in that private firms have liquidity constraints that undermine their bargaining power. This finding is consistent

with Chang (1998) but is not consistent with Bradley and Sudarnam (2004), since the latter study finds that the acquisition of private firms leads to a decline in wealth effects.

4.4.11. GDP Gap between acquirer and target country

The literature review has earlier illustrated that the GDP level of the acquirer and target country could have significant effects on a bidders abnormal return. The GDP gap between acquirer and target country can represent the difference in technology and level of corporate governance. As a result a large GDP gap might entail the high cost of integration because bidders are less likely to cope with the more advanced level of corporate governance, or they might find the technology of developed countries too complicated, difficult and costly to combine with their current technology. Often, the bidders technology must stay at a certain threshold level in order to be able to integrate successfully with the much more advanced technology of developed countries. Therefore, a large difference in technology level (proxied by large GDP gap) can cause a negative influence on a bidders abnormal return. In addition, acquiring firms in developed countries can make the acquirers managers overly optimistic (Kiymaz, 2004), perhaps because they are driven by “national pride” (Hope et al., 2011). According to thehubris hypothesis, an over-optimistic attitude might lead to overpayment. As a result, large GDP difference should not be a good sign for a bidders subsequent abnormal return.

To examine this issue, GDPDIFF is included in the regressor list. GDPDIFF is measured by subtracting the targets GDP by the acquirers GDP. Table 4.2 and Table 4.3 show

significant results in different settings of the matching and regression method. However, the marginal effects of this variable are very close to zero despite being statistically significant, thus suggesting negligible effects.

Table 4.2: Determinants of long-run abnormal return (Kernel matching)

This table reports the results of the OLS regression (panel A) and outlier robust regression (panel B) of the bidders long-run abnormal returns for five different event windows. The abnormal return in this case is estimated in the kernel matching framework. kar1 to kar5: long-run abnormal return estimated in kernel matching for one to five year event windows. Relatedness = 1 denotes acquisitions of targets in the related industry, otherwise relatedness is 0. Payment =1 denotes that payment is made by cash and cash only. Other than that, payment is 0. Acquisition for control =1 denotes that acquirers gain at least 50% of the targets outstanding shares. Otherwise, this variable receives value 0. Multievent =1 if the acquirer has prior experience in developed markets, otherwise it is 0. Dealattitude =1 if the attitude is friendly. If it is an unfriendly bid this variable is 0. Target public status =1 if the target firm is a listed firm in a developed country. If the target is a private firm, this variable is 0. GDP diff.: The difference between the acquirer country's GDP and the target country's GDP. Target Hi index: The Herfindahl index of the target industry denoting the level of competition within the targets industry. VIF: Variance inflation factor. As a rule of thumb, no further multicollinearity concern is required if VIF is less than 10. N: Number of acquirers in the sample. For each variable, the coefficient and t value in parentheses is listed. *,**,*** indicators stand for statistically significant at 1%, 5% and 10%, respectively.

Determinants	**Panel A: Kernel matching and robust OLS**					**Panel B: Kernel matching and outlier robust regression**				
	kar1	**kar2**	**kar3**	**kar4**	**kar5**	**kar1**	**kar2**	**kar3**	**kar4**	**kar5**
Size (ln(mv))	0.014	0.146 **	0.074	0.229 *	0.243	0.071 **	0.162 ***	0.107 **	0.096	0.326
	(-0.4)	(-2.4)	(-0.6)	(-1.9)	(-1.5)	(-2.4)	(-3.1)	(-2.5)	(-1.4)	(-2.5)
Mtb	-0.001	-0.017 **	-0.033 ***	-0.039 **	-0.07 *	-0.006	-0.004	-0.012	-0.021	-0.029
	(-0.19)	(-2.78)	(-3.17)	(-2.63)	(-1.92)	(-0.73)	(-0.35)	(-1.31)	(-1.33)	(-0.97)
Cashratio	0.25	0.484	1.027	-1.458	-0.666	0.093	-0.175	-0.02	-0.002	0.047
	(-0.7)	(-0.8)	(-1.1)	(-1.35)	(-0.32)	(-0.3)	(-0.31)	(-0.05)	(-0.00)	(0)
Relatedness	-0.318 **	-0.187	-0.148	-0.041	-0.033	-0.166 *	-0.274	-0.122	-0.289	-0.163
	(-2.34)	(-1.15)	(-0.91)	(-0.17)	(-0.07)	(-1.69)	(-1.65)	(-0.96)	(-1.47)	(-0.41)
Payment method	0.177	0.279	0.26	0.319	0.697 **	0.039	-0.04	0.19	-0.03	0.396
	(-1.1)	(-1.4)	(-1.1)	(-1.1)	(-2.4)	(-0.3)	(-0.16)	(-1)	(-0.10)	(-0.7)

Acqui. for control	0.01		0.115		-0.201		-0.019	0.452	-0.02		0.237		0.38	**	-0.366		0.322
	(-0.1)		(-0.6)		(-0.61)		(-0.05)	(-1.4)	(-0.18)		(-1.2)		(-2.6)		(-1.56)		(-0.7)
Multievent	-0.017		-0.169		-0.026		-0.144	0.288	-0.07		-0.026		0.133		0.664	***	-0.436
	(-0.14)		(-0.78)		(-0.08)		(-0.42)	(-0.3)	(-0.66)		(-0.14)		(-0.9)		(-2.7)		(-0.92)
acquirer																	
Deal attitude	-0.585		-1.532	**	-1.941		-0.145	-0.859	-0.158		-1.072	***	-0.29		-0.097		-1.47
	(-1.47)		(-2.19)		(-1.60)		(-0.22)	(-0.69)	(-0.79)		(-3.24)		(-1.17)		(-0.23)		(-1.96)
Target public status	0.149		0.078		-0.46		-0.423	-0.358	0.042		0.184		0.148		-0.818	***	-0.151
	(-0.9)		(-0.3)		(-1.34)		(-1.21)	(-0.85)	-(0.4)		(-1)		(-1)		(-3.39)		(-0.32)
Dealvalue	-0.000	**	-0.000	***	-0.000	*	-0.000	-0.000	-0.000		-0.000	***	-0.000		0.000		0.000
	(-2.75)		(-6.22)		(-2.11)		(-1.62)	(-0.32)	(-1.06)		(-2.99)		(-1.32)		(-1.5)		(-0.6)
GDP difference	-0.000	***	0.000		-0.000		0.000	0.000	-0.000	**	0.000		-0.000		-0.000		-0.000
	(-6.34)		(-0.1)		(-0.93)		(-0.9)	(-0.3)	(-1.99)		(-0.3)		(-0.43)		(-0.40)		(-1.50)
Target HI index	0.072		0.844		0.328		0.373	0.77	0.05		0.517		-0.419		-1.652	***	0.949
	(-0.3)		(-1.4)		(-0.4)		(-0.4)	(-1)	(-0.2)		(-1.4)		(-1.43)		(-3.73)		(-1.1)
R-squared	0.123		0.175		0.2		0.108	0.149									
N	162		129		118		100	72	162		129		118		100		72
min VIF	1.09																
max VIF	1.5																

Table 4.3: Determinants of long-run abnormal return (Nearest neighbour matching)

This table reports the results of the OLS regression (panel A) and outlier robust regression (panel B) of the bidders long-run abnormal returns for five different event windows. The abnormal return in this case is estimated within the nearest neighbor matching framework. nnar1 to nnar5: long-run abnormal return estimated in nearest neighbour matching for one to five year event windows. Relatedness = 1 denotes acquisitions of targets in the related industry, otherwise relatedness is 0. Payment =1 denotes that payment is made by cash and cash only. Other than that, payment is 0. Acquisition for control =1 denotes that acquirers gains at least 50% of the targets outstanding shares. Otherwise, this variable receives the value 0. Multievent =1 if the acquirer has prior experience in developed markets, otherwise it is 0. Dealattitude =1 if the attitude is friendly. If it is an unfriendly bid this variable is 0. Target public status =1 if the target firm is a listed firm in a developed country. If the target is a private firm this variable is 0. GDP diff.: The difference between the acquirer country's GDP and the target country's GDP. Target Hi index: The Herfindahl index of the target industry, denoting the level of competition within the targets industry. VIF: Variance inflation factor. As a rule of thumb, no further multicollinearity concern is required if VIF is less than 10. N: Number of acquirers in the sample. For each variable, the coefficient and t value in parentheses is listed. *,**,*** indicators stand for statistically significant at 1%, 5% and 10%, respectively.

Determinants	**Panel A: Nearest neighbour (5) matching and robust OLS**					**Panel B: NN (5) matching and outlier robust regression**				
	nnar1	**nnar2**	**nnar3**	**nnar4**	**nnar5**	**nnar1**	**nnar2**	**nnar3**	**nnar4**	**nnar5**
Size (ln(mv))	0.029	0.143 *	-0.046	0.196 *	0.285	0.079 **	0.139 **	0.04	0.061	0.028
	(-0.7)	(-2)	(-0.36)	(-2.1)	(-1.7)	(-2)	(-2)	(-0.6)	(-0.5)	(-0.1)
Mtb	-0.008	-0.031 ***	-0.036 ***	-0.046 *	-0.048	-0.013	-0.018	-0.02	-0.043 *	-0.035
	(-0.77)	(-5.13)	(-4.45)	(-2.03)	(-0.80)	(-1.26)	(-1.16)	(-1.39)	(-1.71)	(-0.71)
Cashratio	0.065	0.536	1.055	-3.35 **	-3.597	0.309	0.38	0.527	-2.504 *	-1.157
	(-0.2)	(-0.7)	(-1)	(-2.67)	(-1.04)	(-0.7)	(-0.5)	(-0.8)	(-1.98)	(-0.47)
Relatedness	-0.435 **	-0.244	-0.322 *	-0.333	-0.251	-0.256 *	-0.338	-0.348 *	-0.33	-0.121
	(-2.59)	(-0.97)	(-1.87)	(-0.75)	(-0.24)	(-1.93)	(-1.55)	(-1.70)	(-1.01)	(-0.19)
Payment method	0.105	-0.014	0.475	0.742 *	0.493	0.071	-0.22	0.314	0.899 *	1.072
	(-0.5)	(-0.06)	(-1.5)	(-1.8)	(-0.8)	(-0.3)	(-0.69)	(-1)	(-1.7)	(-1.1)
Acqui. for control	0.014	0.07	0.07	0.586	1.201	0.059	0.279	0.624 ***	0.601	1.663
	(-0.1)	(-0.3)	(-0.2)	(-1.1)	(-1.1)	(-0.4)	(-1.1)	(-2.7)	(-1.5)	(-2.4)

Multievent	0.029		-0.046		0.253		0.19		0.326		-0.052		0.023		0.191		0.314		0.299			
	(-0.2)		(-0.21)		(-0.9)		(-0.6)		(-0.4)		(-0.37)		(-0.1)		(-0.8)		(-0.8)		(-0.4)			
acquirer																						
Deal attitude	-0.54		-1.369	**	-1.306		0.704		1.76		-0.364		-1.641	***	-1.087	***	-1.127	*	-2.224			
	(-1.49)		(-2.60)		(-1.04)		(-0.6)		(-0.7)		(-1.45)		(-4.05)		(-2.97)		(-1.78)		(-2.05)			
Target public status	0.167		0.095		-0.548		-1.051	**	-1.096		0.165		0.368		0.017		-0.571		-0.158			
	(-0.9)		(-0.3)		(-1.44)		(-2.34)		(-1.01)		(-1.1)		(-1.5)		(-0.1)		(-1.45)		(-0.20)			
Dealvalue	-0.000	**	-0.000	***	-0.000		-0.000		0.000		-0.000		-0.000	**	-0.000		-0.000		0.000			
	(-2.46)		(-4.43)		(-0.81)		(-0.40)		(-0.9)		(-1.21)		(-2.12)		(-1.51)		(-1.03)		(-0.2)			
GDP difference	-0.000	***	-0.000		-0.000		0.000		0.000	*	-0.000		-0.000		-0.000		0.000		0.000			
	(-3.05)		(-0.20)		(-0.90)		(-1.4)		(-1.9)		(-1.53)		(-0.63)		(-0.88)		(-0.7)		(-0.6)			
Target HI index	-0.309		-0.141		-0.576		-0.155		-0.894		0.036		0.135		-0.185		-0.007		-0.018			
	(-1.10)		(-0.35)		(-0.68)		(-0.20)		(-0.64)		(-0.1)		(-0.3)		(-0.49)		(-0.01)		(-0.01)			
R-squared	0.124		0.131		0.13		0.242		0.216													
N	161		128		116		96		67		161		128		116		96		67			
min VIF	1.06																					
max VIF	1.52																					

4.5. Summary

In this part of the thesis, we essentially examine whether any variation in the wealth effects in cross-border acquisitions from emerging markets can be explained on the basis of competing hypotheses. Although this topic has been well covered in the M&A literature of the US, UK and EU markets, the debate about the estimation method of long-run abnormal return still goes on. Since the abnormal return is measured in the long-run (i.e. over a long time after the acquisition completes), the models used to estimate it have always been under a lot of scrutiny. Taking that into consideration, we use a combination of the propensity score matching framework and difference-in-differences technique in order to estimate the long-run abnormal return. This combination has been proved to be able to yield less biased estimates compared to the stand-alone PSM framework, traditional matching framework or single-index model (Girma et al., 2006; Blundell and Costa Dias, 2000).

The sample period in this study is from 1990 to 2010. Two scenarios of matching (kernel-based, and nearest neighbor) are combined with two regression methods (robust OLS and outlier robust regression) in order to form four different sampling situations. Each sampling situation consists of five settings of event windows ranging from one to five years.

The results indicate that out of three variables used as proxies for hubris and managerial motives, market-to-book ratio and cash ratio are the significant determinants of a bidders abnormal return. The negative effects of these proxies in various sampling

situations are consistent with the prediction of agency theories (Jensen, 1986, 2000). However, the finding about the acquirers size is surprising. Bidders size has commonly been used as a proxy for hubris and managerial motive in the literature, and the available empirical evidence often indicates a negative correlation between an acquirers abnormal return and the acquirer size (Moeller et al., 2004; Gorton, Kahl and Rosen, 2009). However we find that acquirers size is positively and significantly correlated with the acquirers abnormal return, and a significant effect is reported in most sampling situations. While this finding is certainly in contrast with the hubris hypothesis and agency theory, it is consistent with the ownership advantage paradigm and "*reverse internalization theory"* (Dunning 2000; Dunning 2008; Seth et al., 2000; Eun et al., 1996). According to the latter theories, greater size is associated with a larger economy of scale generated from leveraging the utility of the acquired tangible and intangible assets.

Another interesting finding of this study besides the bidders size effects is the significant evidence of a negative correlation between relatedness and the acquirers abnormal return in various settings. This finding suggests the dominance of diversification benefits in conglomerate acquisitions over the benefits of operating in a single segment. However, the results also show that the coefficient, although not significant, decreases rapidly over the time horizon. This observation suggests that the conglomerate acquirer might have a greater benefit one year after the completion of the deal, but this benefit seems to decrease rapidly over time.

Finally, this study documents signs of the positive effects of the bidders previous CBA experience and cash payments on the abnormal returns. This evidence, though being consistent with the theoretical framework, can only be treated as a tentative finding since the parameter estimates are only significant in rare occasions in this sampling situation.

Chapter 5: Conclusion

Over the last two decades, FDI outflows from developing countries have grown rapidly (WIR, 2006). A recent report documents that one quarter of all global FDI outflows are derived from these economies (WIR, 2010). Although most of the outlays from developing countries are directed towards less developed markets, there is a rising trend of FDI from developing to developed markets, and the predominant mode of such investment is through cross-border acquisitions (WIR, 2011; Bhagat et al., 2011). We find that the acquisition of firms in advanced economies, especially by firms in developing markets, represents a phenomenon where the traditional hunter is being hunted. Meanwhile, the literature surprisingly has little to tell us about the internationalization strategy and consequences of bidding firms in this type of acquisition. This thesis therefore addresses this contemporary trend and attempts to provide empirical evidence on the motivation of acquiring firms in this context. This thesis also provides evidence on the effect of acquisition events on the long-run performance of bidding firms and evidence of cross-sectional determinants of these effects.

5.1. Summary of empirical findings

We find that acquirers in non-developed countries are more likely to acquire small firms with low stock of intangible assets in developed countries. This evidence lends support to the strategic market entry hypothesis, in that by acquiring a small firm with a low stock of strategic assets, emerging-markets firms can familiarize themselves to the

advanced business environment and gradually consolidate their global competitive position in the long run. However, the outcome of this motivation is not always as the acquirers managers expect it to be, as shown in our examination of the -wealth effects.

We also find that acquirers in emerging countries have a significantly lower growth rate of stock return after 3, 4 and 5 years (starting from the completion of the acquisition) than they could have been if they had not engaged in acquisition FDI into developed markets. The average difference in return growth rate is at least -35.91% after three years and may reach -71.4% after five years. The remarkable difference demonstrates the strong nature of the value destruction of an acquisition event. The high level of discrepancy between our results and results of previous studies is due to the difference in the measure of abnormal return. This discrepancy can also be partially attributed to the high variance of stock performance in emerging markets.

Further analysis indicates that conventional factors such as previous experience in acquiring firms in advanced economies, method of payment and current policy reform in emerging countries may entail certain benefits. When we control for such factors, the wealth effects become less significant and less negative. Interestingly, gaining control over ownership appears to cast negative impacts on shareholder wealth compared to the acquisition of a minority interest. This evidence reaffirms the value destruction nature of acquisition FDI from emerging to developed economies, even though it is not consistent with some studies such as Chari et al. (2009).

Finally, in the examination of cross-sectional determinants of firm-level wealth effects, we find that market-to-book levels and the level of cash holding are significant determinants of the long-run firm-level abnormal returns. The negative effects of these proxies are in line with the prediction of agency theory (Jensen, 1986) and the hubris hypothesis (Roll 1986). We also find that size effects are robust in various empirical settings of the matching framework and robust regression methods. Interestingly, we find evidence showing that larger firms can mitigate the negative impacts of acquisitions events to some extent. This evidence is contrary to what has been reported in several studies (Moeller et al., 2004; Gorton Kahl and Rosen, 2009). It is, however, consistent with Dunning's (2000, 2008) ownership advantages paradigm. Dunning's argument is that large firms may use incremental economies of scale generated from acquired quality assets to partially compromise the negative effects of acquisition events.

5.2. Contributions to literature

The first essay of the thesis set out to investigate the motivation of acquirers in non-developed countries in their expansion into developed economies in the form of cross-border M&A. Among the three competing theoretical frameworks (market for corporate control - MCC), agency theory, and strategic market entry hypothesis- SME), we argue that the strategic market entry leading to a gradual build up of advanced ownership advantages is the most important motive of the acquirer in the context of this investigation, even though the previous studies (where acquirers who are often from the US and UK) often find evidence supporting MCC (e.g. Zhu et al., 2011; Thompson, 1997). Using a multinomial logistic regression framework, we find no evidence supporting MCC or managerial motives in this context. Instead, we find evidence which is consistent with the SME hypothesis that acquirers in non-developed countries aim at small firms with a low stock of intangible assets in developed countries.

This systematic investigation contributes important understanding to the internationalization of the firms from non-developed markets. The primary motive of the internationalization is not necessarily the same as in non-developed markets. Firms in the US, UK and other developed economies are often endowed with advanced technology, management quality and high governance standards, whilst those in less developed countries are often characterized by a lack of resources and capabilities (Guillen and Garcia-Canas, 2009). The former therefore has the capability to search for and punish inefficient management, while the latter seems to be far from that stage.

Therefore they have the motivation to accumulate ownership advantages in order to catch up with the established firms in developed countries. They may do so by acquiring a small firm with a low stock of strategic assets in order to familiarize themselves with the advanced business environment and gradually consolidate their competitive position for the battle in the long run. Therefore, shareholder's expectations and management perspectives may differ for firms in developed and non-developed economies.

We also add to growing literature on the differential motivation underlying acquisition activities (e.g. Zhu et al., 2011; Thompson, 1997). More specifically, this investigation sheds more light on the explanatory power of SME, MCC and agency theory in the context of non-developed markets.

The thesis follows with an examination of M&A effects on an acquirers wealth in the long run. Although the literature documents a large volume of studies regarding M&A wealth effects, this study makes further contributions by addressing two issues: (1) the lack of evidence regarding long-term effects for particular groups of emerging-market acquirers and developed-market targets, and (2) the methodological problem that plagues a number of long-run studies in the literature. Using a propensity score matching framework in tandem with a difference-in-differences technique, we find new evidence suggesting a remarkable nature of value destruction when emerging-markets bidders acquire firms in the developed world. Several influential factors which presumably have positive impacts on an acquirers wealth appear beneficial but are

unable to dominate the value destroying effects of the merger event in the long run. This strong evidence suggests that managers in emerging countries should be very careful in the consideration of cross-border acquisitions in developed markets since the expected synergies are very likely to be wiped out by underestimated difficulties. Along with this new evidence, the contribution of this essay may also lie in the combination of contemporary methods in the calculation of abnormal returns. This combination has hardly been employed in previous studies despite its remarkable advantages in dealing with selections on observable and unobservable issues.

The last empirical essay is a natural expansion of the second, where we examine the various potential firm-level determinants of long-run abnormal returns. On the basis of the methodological framework used in the second essay, we find that acquirers with a large amount of cash and high market-to-book ratio generally suffer from significant long-term underperformance. This evidence is consistent with the agency theory, as within the agency framework a high level of cash holding and high market-to-book ratio is often associated with a greater degree of managerial and hubris problems respectively. We also find that the size of the acquirer has positive impacts on abnormal returns. This finding suggests incremental economies arising from leveraging the utility of the acquired assets on larger scale may partially compromise the value destruction nature of an M&A event. The reason for this is the acquired assets from advanced economies may enhance the ownership advantages, thereby putting the acquirer on the favourable side of market imperfections. This goes against the available empirical evidence of studies such as Moeller et al., (2004) or Gorton, Kahl and Rosen (2009), who

advocate a negative relationship between firm size and abnormal return. The discrepancy in the results of this study versus previous work highlights the contribution of this study, as it is sometime unreasonable to generalize the empirical results and implications in the context of developed markets and apply them to emerging countries.

5.3. Limitations and direction for future research

We start with data quality. Data quality in developing countries is generally very poor. We need to drop a large volume of observations due to missing data points. This shortcoming confines the choices in our empirical investigations. In the first essay the data only allows for the control of three observable characteristics of the acquirers which influence the acquisition decision (i.e. size, market-to-book and cash ratio), even though the literature encourages the use of a broader set of covariates. A short list of covariates reduces the effectiveness of the control for selections on observables. This issue continues in the second essay, even though we find that even when it lacks control for observables the resulting evidence from the propensity score matching framework appears more reliable than the traditional matching approach. Additionally, an investigation on aggregate data across countries poses some problems. Although we attempt to control for country fixed effects in the generation of counterfactual outcome, averaging the wealth effect of individual acquirers in the sample is unable to deal with the heterogeneity of country effects in the final results. Nonetheless, this problem is dealt with properly in the cross sectional multivariate analysis in the second essay by including country dummies in the explanatory variables.

The first essay uses an indirect approach to investigate the motivation of acquirers from non-developed markets, and the results could have been even more robust if we can use the direct approach at the same time to identify the characteristics that distinguish acquirers targeting firms in developed countries from those targeting firms in less

developed economies. Unfortunately, the limitation of data from developing countries prevents us from doing so.

Given the data inadequacy, future studies may use a different approach such as a case study to find the evidence of wealth effects for an individual country in the developing world. Limiting the analysis within one country can eliminate the heterogeneity of the country fixed effects which contaminate the average wealth effects documented in this study. A case study might also be useful in similar investigations of wealth effects or acquirers motivation where acquiring firms are private rather than public corporations. Finally, the second essay documents evidence which is consistent with hubris and agency theory, thereby suggesting further investigation about the link between the acquisition's wealth effects and managerial ownership and corporate governance.

References

AGRAWAL, A., JAFFE, J. F. & MANDELKER, G. N. 1992. The Post-Merger Performance of Acquiring Firms - a Reexamination of an Anomaly. *Journal of Finance,* 47**,** 1605-1621.

AHUJA, G. & KATILA, R. 2001. Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study. *Strategic Management Journal,* 22**,** 197-220.

ALMEIDA, P. 1996. Knowledge sourcing by foreign multinationals: Patent citation analysis in the US semiconductor industry. *Strategic Management Journal,* 17**,** 155-165.

AMATO, L. & WILDER, R. P. 1985. The Effects of Firm Size on Profit Rates in United-States Manufacturing. *Southern Economic Journal,* 52**,** 181-190.

AMSDEN, A. H. & HIKINO, T. 1994. Project execution capability, organizational know-how and conglomerate corporate growth in late industrialization. *Industrial and Corporate Change,* 3**,** 114-147.

ANDRADE, G., MITCHELL, M. & STAFFORD, E. 2001. New evidence and perspectives on mergers. *Journal of Economic Perspectives,* 15**,** 103-120.

ASQUITH, P. 1983. Merger Bids, Uncertainty, and Stockholder Returns. *Journal of Financial Economics,* 11**,** 51-83.

ASQUITH, P., BRUNER, R. F. & MULLINS, D. W. 1983. The Gains to Bidding Firms from Merger. *Journal of Financial Economics,* 11**,** 121-139.

ATHREYE, S. & KAPUR, S. 2009. Introduction: The internationalization of Chinese and Indian firmstrends, motivations and strategy. *Industrial and Corporate Change,* 18**,** 209-221.

AUBERT, J.-E. 2005. *Promoting Innovation in Developing Countries: A Conceptual Framework* [Online]. Available: http://ssrn.com/abstract=722642.

BARBER, B. M. & LYON, J. D. 1997. Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics,* 43**,** 341-372.

BARKEMA, H. G., BELL, J. H. J. & PENNINGS, J. M. 1996. FOREIGN ENTRY, CULTURAL BARRIERS, AND LEARNING. *Strategic Management Journal,* 17**,** 151-166.

BARNEY, J. B. 1988. Returns to Bidding Firms in Mergers and Acquisitions - Reconsidering the Relatedness Hypothesis. *Strategic Management Journal,* 9**,** 71-78.

BARTEL, A. P. & LICHTENBERG, F. R. 1987. The Comparative Advantage of Educated Workers in Implementing New Technology. *Review of Economics and Statistics,* 69**,** 1-11.

BAYAZITOVA, D., KAHL, M. & VALKANOV, R. 2009. Which mergers destroy value? Only mega-mergers. University of North Carolina working paper.

BENOU, G., GLEASON, K. C. & MADURA, J. 2007. Impact of visibility and investment advisor credibility on the valuation effects of high-tech cross-border acquisitions. *Financial Management,* 36**,** 69-89.

BHAGAT, S., DONG, M., HIRSHLEIFER, D. & NOAH, R. 2005. Do tender offers create value? New methods and evidence. *Journal of Financial Economics,* 76**,** 3-60.

BHAGAT, S., MALHOTRA, S. & ZHU, P. C. 2011. Emerging country cross-border acquisitions: Characteristics, acquirer returns and cross-sectional determinants. *Emerging Markets Review,* 12**,** 250-271.

BHAUMIK, S. K., DRIFFIELD, N. & PAL, S. 2010. Does ownership structure of emerging-market firms affect their outward FDI[quest] The case of the Indian automotive and pharmaceutical sectors. Journal of International Business Studies, 41, 437-450.

BHAUMIK, S. K. & DRIFFIELD, N. 2011. Direction of outward FDI of EMNEs: Evidence from the Indian pharmaceutical sector. Thunderbird International Business Review, 53, 615-628.

BLIND, K., EDLER, J., FRIETSCH, R. & SCHMOCH, U. 2006. Motives to patent: Empirical evidence from Germany. *Research Policy,* 35**,** 655-672.

BOATENG, A., QIAN, W. & TIANLE, Y. 2008. Cross-border M&As by Chinese firms: An analysis of strategic motives and performance. *Thunderbird International Business Review,* 50**,** 259-270.

BRADLEY, M., AND SUNDARAM, A., 2004. Do acquisitions drive performance or does performance drive acquisitions? *SSRN Working paper*.

BRADLEY, M., DESAI, A. & KIM, E. H. 1988. Synergistic Gains from Corporate Acquisitions and Their Division between the Stockholders of Target and Acquiring Firms. *Journal of Financial Economics,* 21**,** 3-40.

BRAV, A., GECZY, C. & GOMPERS, P. A. 2000. Is the abnormal return following equity issuances anomalous? *Journal of Financial Economics,* 56**,** 209-249.

BROUTHERS, K. D. & BROUTHERS, L. E. 2000. Acquisition or greenfield start-up? Institutional, cultural and transaction cost influences. *Strategic Management Journal,* 21**,** 89-97.

BROWN, S. J. & WARNER, J. B. 1980. Measuring security price performance. *Journal of Financial Economics,* 8**,** 205-258.

BUHNER, R. 1991. The Success of Mergers in Germany. *International Journal of Industrial Organization,* 9**,** 513-532.

BYRD, J. W. & STAMMERJOHAN, W. W. 1997. Success and Failure in the Market for Corporate Control: Evidence from the Petroleum Industry. *Financial Review,* 32**,** 635-658.

CAKICI, N., HESSEL, C. & TANDON, K. 1996. Foreign acquisitions in the United States: Effect on shareholder wealth of foreign acquiring firms. *Journal of Banking & Finance,* 20**,** 307-329.

CAPRON, L., DUSSAUGE, P. & MITCHELL, W. 1998. Resource redeployment following horizontal acquisitions in Europe and North America, 1988-1992. *Strategic Management Journal,* 19**,** 631-661.

CARHART, M. M. 1997. On persistence in mutual fund performance. *Journal of Finance,* 52**,** 57-82.

CASELLI, F. & COLEMAN, W. J. 2001. Cross-country technology diffusion: The case of computers. *American Economic Review,* 91**,** 328-335.

CAVES, R. E. 1971. International Corporations - Industrial Economics of Foreign Investment. *Economica,* 38**,** 1-27.

CAVES, R. E. 1989. Mergers, Takeovers, and Economic-Efficiency - Foresight Vs Hindsight. *International Journal of Industrial Organization,* 7**,** 151-174.

CHANG, S. J. 1995. International Expansion Strategy of Japanese Firms - Capability Building through Sequential Entry. *Academy of Management Journal,* 38**,** 383-407.

CHANG, S. Y. 1998. Takeovers of privately held targets, methods of payment, and bidder returns. *Journal of Finance,* 53**,** 773-784.

CHARI, A., OUIMET, P. P. & TESAR, L. L. 2010. The Value of Control in Emerging Markets. *Review of Financial Studies,* 23**,** 1741-1770.

CHATTERJEE, A. 2000. The financial performance of companies acquiring very large takeover targets. *Applied Finacial Economics,* 10**,** 185-191.

CHEN, C. & SU, R. 1997. Do cross-border acquisitions of U.S. targets differ from U.S. domestic takeover targets? *Global Finance Journal,* 8**,** 71-82.

CHILD, J. & RODRIGUES, S. B. 2005. The Internationalization of Chinese Firms: A Case for Theoretical Extension?[1]. *Management and Organization Review,* 1**,** 381-410.

COHEN, W. M., NELSON, R. R. & WALSH, J. P. 2000. Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not). *National Bureau of Economic Research Working Paper Series,* No. 7552.

COMIN, D. & HOBIJN, B. 2004. Cross-country technology adoption: making the theories face the facts. *Journal of Monetary Economics,* 51**,** 39-83.

CONN, R. L., COSH, A., GUEST, P. M. & HUGHES, A. O. 2005. The impact on UK acquirers of domestic, cross-border, public and private acquisitions. *Journal of Business Finance & Accounting,* 32**,** 815-870.

COSH, A. D., HUGHES, A., LEE, K. & SINGH, A. 1989. Institutional Investment, Mergers and the Market for Corporate-Control. *International Journal of Industrial Organization,* 7**,** 73-100.

COUTTS, J. A., MILLS, T. C. & ROBERTS, J. 1994. The market model and the event study method: A synthesis of the econometric criticisms. *International Review of Financial Analysis,* 3**,** 149-171.

DANBOLT, J. 1995a. An analysis of gains and losses to shareholders of foreign bidding companies engaged in cross-border acquisitions into the United Kingdom, 1986-1991 *European Journal of Finance,* 3**,** 279-309.

DANBOLT, J. 1995b. An analysis of gains and losses to shareholders of foreign bidding companies engaged in cross-border acquisitions into the United Kingdom, 1986-1991 %U http://eprints.gla.ac.uk/3692. *European Journal of Finance,* 1**,** 279-309.

DANIEL, K., HIRSHLEIFER, D. & SUBRAHMANYAM, A. 1998. Investor psychology and security market under- and overreactions. *Journal of Finance,* 53**,** 1839-1885.

DATTA, S., ISKANDAR-DATTA, M. & RAMAN, K. 2001. Executive compensation and corporate acquisition decisions. *Journal of Finance,* 56**,** 2299-2336.

DE BEULE, F. & DUANMU, J.-L. 2012. Locational determinants of internationalization: A firm-level analysis of Chinese and Indian acquisitions. *European Management Journal,* 30**,** 264-277.

DEHEJIA, R. H. & WAHBA, S. 1998. Propensity Score Matching Methods for Non-experimental Causal Studies. *National Bureau of Economic Research Working Paper Series,* No. 6829.

DEMSETZ, H. & LEHN, K. 1985. The Structure of Corporate-Ownership - Causes and Consequences. *Journal of Political Economy,* 93**,** 1155-1177.

DENG, P. 2009. Why do Chinese firms tend to acquire strategic assets in international expansion? *Journal of World Business,* 44**,** 74-84.

DESAI, H. & JAIN, P. C. 1997. Long-Run Common Stock Returns Following Stock Splits and Reverse Splits. *Journal of Business,* 70.

DICKERSON, A. P., GIBSON, H. D. & TSAKALOTOS, E. 1997. The impact of acquisitions on company performance: Evidence from a large panel of UK firms. *Oxford Economic Papers-New Series,* 49**,** 344-361.

DIMSON, E. & MARSH, P. 1986. Event Study Methodologies and the Size Effect - the Case of Uk Press Recommendations. *Journal of Financial Economics,* 17**,** 113-142.

DINARA BAYAZITOVA, M. K., AND ROSSEN VALKANOV, 2009. Which Mergers Destroy Value? Only Mega-Mergers. *Working Paper*.

DOIDGE, C., KAROLYI, G. A. & STULZ, R. M. 2007. Why do countries matter so much for corporate governance? *Journal of Financial Economics,* 86**,** 1-39.

DONG, M., HIRSHLEIFER, D., RICHARDSON, S. & TEOH, S. H. 2006. Does investor misvaluation drive the takeover market? *Journal of Finance,* 61**,** 725-762.

DUNNING, J. & LUNDAN, M. 2008. *Multinational Enterprises and the Global Economy*.

DUNNING, J. H., PAK, Y. S. & BELDONA, S. 2007. Foreign ownership strategies of UK and US international franchisors: An exploratory application of Dunning's envelope paradigm. *International Business Review,* 16**,** 531-548.

DYCK, A. & ZINGALES, L. 2002. Private Benefits of Control: An International Comparison. *National Bureau of Economic Research Working Paper Series,* No. 8711.

EASTERLY, W. & LEVINE, R. 2001. It's not factor accumulation: Stylized facts and growth models. *World Bank Economic Review,* 15**,** 177-219.

EATON, J. & KORTUM, S. 1996. Trade in ideas - Patenting and productivity in the OECD. *Journal of International Economics,* 40**,** 251-278.

ECKBO, B. E., GIAMMARINO, R. M. & HEINKEL, R. L. 1990. Asymmetric Information and the Medium of Exchange in Takeovers - Theory and Tests. *Review of Financial Studies,* 3**,** 651-675.

EUN, C. S., KOLODNY, R. & SCHERAGA, C. 1996. Cross-border acquisitions and shareholder wealth: Tests of the synergy and internalization hypotheses. *Journal of Banking & Finance,* 20**,** 1559-1582.

FAMA, E. F. & FRENCH, K. R. 1993. Common Risk-Factors in the Returns on Stocks and Bonds. *Journal of Financial Economics,* 33**,** 3-56.

FAN, J. Q. 1992. Design-Adaptive Nonparametric Regression. *Journal of the American Statistical Association,* 87**,** 998-1004.

FAN, J. Q. 1993. Local Linear-Regression Smoothers and Their Minimax Efficiencies. *Annals of Statistics,* 21**,** 196-216.

FRANKS, J. & MAYER, C. 1996. Hostile takeovers and the correction of managerial failure. *Journal of Financial Economics,* 40**,** 163-181.

FRANKS, J. R. & HARRIS, R. S. 1989. Shareholder Wealth Effects of Corporate Takeovers - the Uk Experience 1955-1985. *Journal of Financial Economics,* 23**,** 225-249.

FREY, R. & HUSSINGER, K. 2006. The role of technology in M&As: a firm-level comparison of cross-border and domestic deals. Deutsche Bundesbank, Research Centre.

FROLICH, M. 2004. Finite-sample properties of propensity-score matching and weighting estimators. *Review of Economics and Statistics,* 86**,** 77-90.

FROOT, K. A. & STEIN, J. C. 1991. Exchange-Rates and Foreign Direct-Investment - an Imperfect Capital-Markets Approach. *Quarterly Journal of Economics,* 106**,** 1191-1217.

FUKAO, K., ITO, K., KWON, H. U. & TAKIZAWA, M. 2006. Cross-Border Acquisitions and Target Firms' Performance: Evidence From Japanese Firm-Level Data. *National Bureau of Economic Research Working Paper Series,* No. 12422.

FULLER, K., NETTER, J. & STEGEMOLLER, M. 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *Journal of Finance,* 57**,** 1763-1793.

GEORGOPOULOS, G. J. 2008. Cross-border mergers and acquisitions: does the exchange rate matter? Some evidence for Canada. *Canadian Journal of Economics-Revue Canadienne D Economique,* 41**,** 450-474.

GIBSON, M. S. 2003. Is corporate governance ineffective in emerging markets? *Journal of Financial and Quantitative Analysis,* 38**,** 231-250.

GIRMA, S., GREENAWAY, D. & KNELLER, R. 2003. Export market exit and performance dynamics: a causality analysis of matched firms. *Economics Letters,* 80**,** 181-187.

GIRMA, S., KNELLER, R. & PISU, M. 2007. Do exporters have anything to learn from foreign multinationals? *European Economic Review,* 51**,** 993-1010.

GOERGEN, M. & RENNEBOOG, L. 2003. Shareholder Wealth Effects of European Domestic and Cross-Border Takeover Bids. United Nations University, Institute for New Technologies.

GRAEBNER, M. E. 2004. Momentum and serendipity: How acquired leaders create value in the integration of technology firms. *Strategic Management Journal,* 25**,** 751-777.

GRAFF, G. D., RAUSSER, G. C. & SMALL, A. A. 2003. Agricultural biotechnology's complementary intellectual assets. *Review of Economics and Statistics,* 85**,** 349-363.

GREGORY, A. 1997. An Examination of the Long Run Performance of UK Acquiring Firms. *Journal of Business Finance & Accounting,* 24**,** 971-1002.

GRINSTEIN, Y. & HRIBAR, P. 2004. CEO compensation and incentives: Evidence from M&A bonuses. *Journal of Financial Economics,* 73**,** 119-143.

GROSSMAN, S. J. & HART, O. D. 1980. Takeover Bids, the Free-Rider Problem, and the Theory of the Corporation. *Bell Journal of Economics,* 11**,** 42-64.

GROSSMAN, S. J. & HART, O. D. 1986. The Costs and Benefits of Ownership - a Theory of Vertical and Lateral Integration. *Journal of Political Economy,* 94**,** 691-719.

GRUBAUGH, S. G. 1987. Determinants of Direct Foreign-Investment. *Review of Economics and Statistics,* 69**,** 149-152.

GUBBI, S. R., AULAKH, P. S., RAY, S., SARKAR, M. B. & CHITTOOR, R. 2010. Do international acquisitions by emerging-economy firms create shareholder value? The case of Indian firms. *Journal of International Business Studies,* 41**,** 397-418.

GUILLEN, M. F. & GARCIA-CANAL, E. 2009. The American Model of the Multinational Firm and the "New" Multinationals From Emerging Economies. *Academy of Management Perspectives,* 23**,** 23-35.

GUO, S. & FRASER, M. 2010. *Propensity score analysis Statistical methods and applications*, Sage.

HALL, R. E. & JONES, C. I. 1999. Why do some countries produce so much more output per worker than others? *Quarterly Journal of Economics,* 114**,** 83-116.

HARRIS, R. S. & RAVENSCRAFT, D. 1991. The Role of Acquisitions in Foreign Direct-Investment - Evidence from the United-States Stock-Market. *Journal of Finance,* 46**,** 825-844.

HART, O. & MOORE, J. 1990. Property-Rights and the Nature of the Firm. *Journal of Political Economy,* 98**,** 1119-1158.

HART, O. & MOORE, J. 2008. Contracts as reference points. *Quarterly Journal of Economics,* 123**,** 1-48.

HASBROUCK, J. 1985. The Characteristics of Takeover Targets Q and Other Measures. *Journal of Banking & Finance,* 9**,** 351-362.

HENNART, J. F. & REDDY, S. B. 2000. Digestibility and asymmetric information in the choice between acquisitions and joint ventures: Where's the beef? *Strategic Management Journal,* 21**,** 191-193.

HITT, M. A., LI, H. & WORTHINGTON, W. J. 2005. Emerging Markets as Learning Laboratories: Learning Behaviors of Local Firms and Foreign Entrants in Different Institutional Contexts. *Management and Organization Review,* 1**,** 353-380.

HOLMSTROM, B. & TIROLE, J. 1997. Financial Intermediation, Loanable Funds, and the Real Sector. *The Quarterly Journal of Economics,* 112**,** 663-691.

HOPE, O. K., THOMAS, W. & VYAS, D. 2011. The cost of pride: Why do firms from developing countries bid higher? *Journal of International Business Studies,* 42**,** 128-151.

HORST, T. 1986. The process of direct foreign investment. *Working Paper*.

HUSSINGER, K. 2005. Did Concentration on Core Competencies Drive Merger and Acquisition Activities in the 1990s? Empirical Evidence for Germany. ZEW - Zentrum für Europäische Wirtschaftsforschung / Center for European Economic Research.

JAMES, H., HIDEHIKO, I., JEFFREY, S. & PETRA, T. 1998. Characterizing Selection Bias Using Experimental Data. *Econometrica,* 66**,** 1017-1098.

JAMES, J. H. & PETRA, E. T. 2009. A Note on Adapting Propensity Score Matching and Selection Models to Choice Based Samples. National Bureau of Economic Research, Inc.

JARRELL, G. A., BRICKLEY, J. A. & NETTER, J. M. 1988. The Market for Corporate-Control - the Empirical-Evidence since 1980. *Journal of Economic Perspectives,* 2**,** 49-68.

JARRELL, G. A. & POULSEN, A. B. 1989. The Returns to Acquiring Firms in Tender Offers - Evidence from 3 Decades. *Financial Management,* 18**,** 12-19.

JEFFREY, S. & PETRA, T. 2003. Does Matching Overcome Lalonde's Critique of Nonexperimental Estimators? : University of Western Ontario, CIBC Centre for Human Capital and Productivity.

JENSEN, M. C. 1986. Agency Costs of Free Cash Flow, Corporate-Finance, and Takeovers. *American Economic Review,* 76**,** 323-329.

JENSEN, M. C. & RUBACK, R. S. 1983. The Market for Corporate-Control - the Scientific Evidence. *Journal of Financial Economics,* 11**,** 5-50.

JIM, L. 2009. Does Size Matter in Firm Performance? Evidence from US Public Firms. *International Journal of the Economics of Business,* 16**,** 189-203.

JOVANOVIC, B. & ROUSSEAU, P. L. 2002. The Q-theory of mergers. *American Economic Review,* 92**,** 198-204.

JYRKI, A.-Y. 2002. Mergers and Acquisitions - Reasons and Results. The Research Institute of the Finnish Economy.

KALE, P. 2004. *Acquisition value creation in emerging markets: an empirical study of acquisitions in India* [Online]. University of Michigan Business School.

KANG, J. K. 1993. The International Market for Corporate-Control - Mergers and Acquisitions of United-States Firms by Japanese Firms. *Journal of Financial Economics,* 34**,** 345-371.

KATAYAMA, H., LU, S. & TYBOUT, J. 2003. Why Plant-Level Productivity Studies are Often Misleading, and an Alternative Approach to Interference. *National Bureau of Economic Research Working Paper Series,* No. 9617.

KELLER, W. 1996. Absorptive capacity: On the creation and acquisition of technology in development. *Journal of Development Economics,* 49**,** 199-227.

KELLER, W. 2004. International technology diffusion. *Journal of Economic Literature,* 42**,** 752-782.

KHANNA, T. & PALEPU, K. 1997. Why focused strategies may be wrong for emerging markets. *Harvard Business Review,* 75**,** 41-&.

KHANNA, T. & PALEPU, K. G. 2004. Globalization and convergence in corporate governance: evidence from Infosys and the Indian software industry. *Journal of International Business Studies,* 35**,** 484-507.

KIM, W. S. 2000. *Does FDI Increase Firm Value in Emerging Markets?* [Online]. Available: http://www.wcfia.harvard.edu/node/414.

KIYMAZ, H. 2004. Cross-border acquisitions of US financial institutions: Impact of macroeconomic factors. *Journal of Banking & Finance,* 28**,** 1413-1439.

KLEIN, M. W. & ROSENGREN, E. 1994. The Real Exchange-Rate and Foreign Direct-Investment in the United-States - Relative Wealth Vs Relative Wage Effects. *Journal of International Economics,* 36**,** 373-389.

KLENOW, P. J. & RODRIGUEZ-CLARE, A. 1997. The neoclassical revival in growth economics: Has it gone too far? *Nber Macroeconomics Annual 1997,* 12**,** 73-+.

KOGUT, B. & ZANDER, U. 1992. Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. *Organization Science,* 3**,** 383-397.

KOHERS, N. & KOHERS, T. 2001. Takeovers of technology firms: Expectations vs. reality. *Financial Management,* 30**,** 35-54.

KOTHARI, S. P. 2001. Capital markets research in accounting. *Journal of Accounting & Economics,* 31**,** 105-231.

KOTHARI, S. P. & WARNER, J. B. 1997. Measuring long-horizon security price performance. *Journal of Financial Economics,* 43**,** 301-339.

KRUSELL, P. & RÍOS-RULL, J.-V. 1996. Vested Interests in a Positive Theory of Stagnation and Growth. *The Review of Economic Studies,* 63**,** 301-329.

LA PORTA, R., LOPEZ-DE-SILANES, F., SHLEIFER, A. & VISHNY, R. 2002. Investor protection and corporate valuation. *Journal of Finance,* 57**,** 1147-1170.

LA PORTA, R., LOPEZ-DE-SILANES, F., SHLEIFER, A. & VISHNY, R. W. 1998. Law and finance. *Journal of Political Economy,* 106**,** 1113-1155.

LAKONISHOK, J. & VERMAELEN, T. 1990. Anomalous Price Behavior around Repurchase Tender Offers. *Journal of Finance,* 45**,** 455-477.

LALL, S. 1983. *The new multinationals* Wiley.

LANGETIEG, T. C. 1978. Application of a 3-Factor Performance Index to Measure Stockholder Gains from Merger. *Journal of Financial Economics,* 6**,** 365-383.

LECRAW, D. 1977. Direct-Investment by Firms from Less Developed-Countries. *Oxford Economic Papers-New Series,* 29**,** 442-457.

LEVINSOHN, J. & PETRIN, A. 2003. Estimating production functions using inputs to control for unobservables. *Review of Economic Studies,* 70**,** 317-341.

LIMMACK, R. J. 1993. Bidder Companies and Defended Bids: A Test of Roll's Hubris Hypothesis. *Managerial Finance,* 19**,** 25-36.

LOUGHRAN, T. & VIJH, A. M. 1997. Do Long-Term Shareholders Benefit From Corporate Acquisitions? *The Journal of Finance,* 52**,** 1765-1790.

LOUGHRAN, T. & RITTER, J. R. 1995. The New Issues Puzzle. *The Journal of Finance,* 50**,** 23-51.

LUO, Y. D. & TUNG, R. L. 2007. International expansion of emerging market enterprises: A springboard perspective. *Journal of International Business Studies,* 38**,** 481-498.

MACKINLAY, A. C. 1997. Event studies in economics and finance. *Journal of Economic Literature,* 35**,** 13-39.

MAGEE, S. P. 1981. The Appropriability Theory of the Multinational-Corporation. *Annals of the American Academy of Political and Social Science,* 458**,** 123-135.

MAKINO, S., LAU, C. M. & YEH, R. S. 2002. Asset-exploitation versus asset-seeking: Implications for location choice of foreign direct investment from newly industrialized economies. *Journal of International Business Studies,* 33**,** 403-421.

MALATESTA, P. H. 1983. The Wealth Effect of Merger Activity and the Objective Functions of Merging Firms. *Journal of Financial Economics,* 11**,** 155-181.

MARKIDES, C. C. & ITTNER, C. D. 1994. Shareholder Benefits from Corporate International Diversification - Evidence from United-States International Acquisitions. *Journal of International Business Studies,* 25**,** 343-366.

MARTYNOVA, M. & RENNEBOOG, L. 2008. A century of corporate takeovers: What have we learned and where do we stand? *Journal of Banking & Finance,* 32**,** 2148-2177.

MCCONNELL, J. J. & SERVAES, H. 1990. Additional Evidence on Equity Ownership and Corporate Value. *Journal of Financial Economics,* 27**,** 595-612.

MEYER, K. E., ESTRIN, S., BHAUMIK, S. K. & PENG, M. W. 2009. Institutions, resources, and entry strategies in emerging economies. Strategic Management Journal, 30, 61-80.

MOELLER, S. B. & SCHLINGEMANN, F. P. 2005. Global diversification and bidder gains: A comparison between cross-border and domestic acquisitions. *Journal of Banking & Finance,* 29**,** 533-564.

MOELLER, S. B., SCHLINGEMANN, F. P. & STULZ, R. M. 2004. Firm size and the gains from acquisitions. *Journal of Financial Economics,* 73**,** 201-228.

MOELLER, S. B., SCHLINGEMANN, F. P. & STULZ, R. M. 2005. Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. *Journal of Finance,* 60**,** 757-782.

MORCK, R., SHLEIFER, A. & VISHNY, R. W. 1988. Management Ownership and Market Valuation - an Empirical-Analysis. *Journal of Financial Economics,* 20**,** 293-315.

MORCK, R. & YEUNG, B. 1991. Why Investors Value Multinationality. *Journal of Business,* 64**,** 165-187.

MORCK, R. & YEUNG, B. 1992. Internalization - an Event Study Test. *Journal of International Economics,* 33**,** 41-56.

MYERS, S. C. & MAJLUF, N. S. 1984. Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have. *Journal of Financial Economics,* 13**,** 187-221.

NEUBAUSER, L. A. C., N. 1992. Why Japanese Firms Have Pulled Back on Overseas Buying. *Mergers and Acquisitions,* 27**,** 13-17.

NORBACK, P. J., PERSSON, L. & VLACHOS, J. 2009. Cross-border acquisitions and taxes: efficiency and tax revenues. *Canadian Journal of Economics-Revue Canadienne D Economique,* 42**,** 1473-1500.

PALEPU, K. G. 1986. Predicting Takeover Targets - a Methodological and Empirical-Analysis. *Journal of Accounting & Economics,* 8**,** 3-35.

PARENTE, S. L. 1994. Technology Adoption, Learning-by-Doing, and Economic Growth. *Journal of Economic Theory,* 63**,** 346-369.

PINKOWITZ, L. & WILLIAMSON, R. 2001. Bank power and cash holdings: Evidence from Japan. *Review of Financial Studies,* 14**,** 1059-1082.

RADELET, S. & SACHS, J. D. 1998. The East Asian financial crisis: Diagnosis, remedies, prospects. *Brookings Papers on Economic Activity***,** 1-90.

RAJAN, R., SERVAES, H. & ZINGALES, L. 2000. The Cost of Diversity: The Diversification Discount and Inefficient Investment. The Journal of Finance, 55, 35-80.

RAJNEESH, N. & JOHN, D. 2010. Multinational Enterprises, Development and Globalization: Some Clarifications and a Research Agenda. *Oxford Development Studies,* 38**,** 263-287.

RANFT, A. L. & LORD, M. D. 2002. Acquiring new technologies and capabilities: A grounded model of acquisition implementation. *Organization Science,* 13**,** 420-441.

RAU, P. R. & VERMAELEN, T. 1998. Glamour, value and the post-acquisition performance of acquiring firms. *Journal of Financial Economics,* 49**,** 223-253.

RAVENSCRAFT, D. J. 1983. Structure Profit Relationships at the Line of Business and Industry Level. *Review of Economics and Statistics,* 65**,** 22-31.

RHODES-KROPF, M. & ROBINSON, D. T. 2008. The market for mergers and the boundaries of the firm. *Journal of Finance,* 63**,** 1169-1211.

RICHARD, B. & MONICA COSTA, D. 2000. Evaluation methods for non-experimental data. *Fiscal Studies,* 21**,** 427-468.

ROLL, R. 1986. The Hubris Hypothesis of Corporate Takeovers. *Journal of Business,* 59**,** 197-216.

ROSENBAUM, P. R. & RUBIN, D. B. 1983. The central role of the propensity score in observational studies for causal effects. *Biometrika,* 70**,** 41-55.

ROSENBAUM, P. R. 2002. Covariance Adjustment in Randomized Experiments and Observational Studies: Rejoinder. Statistical Science, 17, 321-327.

ROSSI, S. & VOLPIN, P. F. 2004. Cross-country determinants of mergers and acquisitions. Journal of Financial Economics, 74, 277-304.

RUBIN, D. B. 2008. For objective causal inference, design trumps analysis. The Annals of Applied Statistics, 2, 808-840.

RUGMAN, A. M. & LI, J. 2007. Will China's Multinationals Succeed Globally or Regionally? *European Management Journal,* 25**,** 333-343.

RUI, H. C. & YIP, G. S. 2008. Foreign acquisitions by Chinese firms: A strategic intent perspective. *Journal of World Business,* 43**,** 213-226.

RUMSEY, J. 1996. The market model and the event study method: A synthesis of econometric criticisms: Comment. *International Review of Financial Analysis,* 5**,** 79-81.

SAFIEDDINE, A. & TITMAN, S. 1999. Leverage and corporate performance: Evidence from unsuccessful takeovers. *Journal of Finance,* 54**,** 547-580.

SCHARFSTEIN, D. S. & STEIN, J. C. 2000. The dark side of internal capital markets: Divisional rent-seeking and inefficient investment. *Journal of Finance,* 55**,** 2537-2564.

SCHERER, F. M. 1973. Determinants of Industrial Plant Sizes in 6 Nations. *Review of Economics and Statistics,* 55**,** 135-145.

SCHNEIDER, C. 2008. Fences and competition in patent races. *International Journal of Industrial Organization,* 26**,** 1348-1364.

SCHOLES, M. S. & WOLFSON, M. A. 1990. The Effects of Changes in Tax Laws on Corporate Reorganization Activity. *Journal of Business,* 63**,** S141-S164.

SCHWERT, G. W. 2000. Hostility in takeovers: In the eyes of the beholder? *Journal of Finance,* 55**,** 2599-2640.

SETH, A., SONG, K. P. & PETTIT, R. R. 2002. Value creation and destruction in cross-border acquisitions: An empirical analysis of foreign acquisitions of US firms. *Strategic Management Journal,* 23**,** 921-940.

SHEPHERD, W. G. 1972. Elements of Market Structure. *Review of Economics and Statistics,* 54**,** 25-37.

SHIMIZU, K., HITT, M. A., VAIDYANATH, D. & PISANO, V. 2004. Theoretical foundations of cross-border mergers and acquisitions: A review of current research and recommendations for the future. *Journal of International Management,* 10**,** 307-353.

SHIN, H. H. & STULZ, R. M. 1998. Are internal capital markets efficient? *Quarterly Journal of Economics,* 113**,** 530-552.

SINGH, A. 1975. Take-Overs, Economic Natural-Selection, and Theory of Firm - Evidence from Postwar United-Kingdom Experience. *Economic Journal,* 85**,** 497-515.

SMITH, C. W. & WATTS, R. L. 1992. The Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies. *Journal of Financial Economics,* 32**,** 263-292.

SONG, M. H. & WALKLING, R. A. 1993. The Impact of Managerial Ownership on Acquisition Attempts and Target Shareholder Wealth. *Journal of Financial and Quantitative Analysis,* 28**,** 439-457.

SORESCU, A. B., CHANDY, R. K. & PRABHU, J. C. 2007. Why some acquisitions do better than others: Product capital as a driver of long-term stock returns. *Journal of Marketing Research,* 44**,** 57-72.

SPIESS, D. K. & AFFLECK-GRAVES, J. 1995. Underperformance in long-run stock returns following seasoned equity offerings. *Journal of Financial Economics,* 38**,** 243-267.

STIGLITZ, J. E. & WEISS, A. 1981. Credit Rationing in Markets with Imperfect Information. *American Economic Review,* 71**,** 393-410.

SUDARSANAM, S. 2003. *Creating value from mergers and acquisitions: The challenges*, Harlow, Prentice Hall.

SUDARSANAM, S. & MAHATE, A. A. 2003. Glamour Acquirers, Method of Payment and Post-acquisition Performance: The UK Evidence. *Journal of Business Finance & Accounting,* 30**,** 299-342.

TAN, X. M. 2010. Clean technology R&D and innovation in emerging countries-Experience from China. *Energy Policy,* 38**,** 2916-2926.

THOMPSON, S. 1997. Takeover activity among financial mutuals: An analysis of target characteristics. *Journal of Banking & Finance,* 21**,** 37-53.

TRAVLOS, N. G. 1987. Corporate Takeover Bids, Methods of Payment, and Bidding Firms Stock Returns. *Journal of Finance,* 42**,** 943-963.

TSAGKANOS, A., GEORGOPOULOS, A. & SIRIOPOULOS, C. 2006. Predicting Takeover Targets: New Evidence from a Small Open Economy. *International Research Journal of Finance and Economics,* 4.

URRUTIA 1995. Tests of random walk and market efficiency for Latin American emerging markets. *Journal of financial research* 18**,** 299-309.

WIR 2006. *World investment report 2006: FDI from developing and transitional economies: Implication for development,* NewYork and Geneve, United Nations.

WIR 2007 *Transnational corporations, extractive industries and development*.

WIR 2010. *Investing in low-carbon economy*.

WIR 2011. NON-EQUITY MODES OF INTERNATIONAL PRODUCTION AND DEVELOPMENT.

WU, F. 2005 The Globalization of Corporate China. *National Bureau of Asian Research,* December.

XU, B. 2000. Multinational enterprises, technology diffusion, and host country productivity growth. *Journal of Development Economics,* 62**,** 477-493.

YIU, D. W., LAU, C. M. & BRUTON, G. D. 2007. International venturing by emerging economy firms: the effects of firm capabilities, home country networks, and corporate entrepreneurship. *Journal of International Business Studies,* 38**,** 519-540.

YOUNG, M. N., PENG, M. W., AHLSTROM, D., BRUTON, G. D. & JIANG, Y. 2008. Corporate governance in emerging economies: A review of the principal-principal perspective. *Journal of Management Studies,* 45**,** 196-220.

ZAHEER, S. 1995. Overcoming the Liability of Foreignness. *Academy of Management Journal,* 38**,** 341-363.

ZHU, P. C., JOG, V. & OTCHERE, I. 2011. Partial acquisitions in emerging markets: A test of the strategic market entry and corporate control hypotheses. *Journal of Corporate Finance,* 17**,** 288-305.